Access DB# 81241

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lynda Guo Examiner # : 79756 Date: 11/27/02
Art Unit: 1651 Phone Number ~~30~~ 605-1200 Serial Number: 09/977,555
Mail Box and Bldg/Room Location: 11B01/11A16 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need. mey

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for the detection of urease and method for using same

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Jan D. please.

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

****

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=> fil reg
FILE 'REGISTRY' ENTERED AT 14:56:27 ON 06 DEC 2002
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:     5 DEC 2002  HIGHEST RN 475231-25-5
DICTIONARY FILE UPDATES:    5 DEC 2002  HIGHEST RN 475231-25-5

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can tot

L91  ANSWER 1 OF 5  REGISTRY  COPYRIGHT 2002 ACS
RN   14798-03-9  REGISTRY
CN   Ammonium (8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Ammonia ion (NH4+)
CN   Ammonia, ion (NH41+)
CN   Ammonium (NH4+)
CN   Ammonium cation
CN   Ammonium ion
CN   Ammonium ion (NH4+)
CN   Ammonium ion(+)
CN   Ammonium ion(1+)
CN   Ammonium(1+)
FS   3D CONCORD
DR   194419-49-3, 372952-69-7
MF   H4 N
CI   COM
LC   STN Files:   ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
       BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
       CHEMINFORMRX, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU,
       EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, NIOSHTIC, PDLCOM*, PIRA,
       PROMT, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
         (*File contains numerically searchable property data)
```

NH_4^+

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          41525 REFERENCES IN FILE CA (1962 TO DATE)
            721 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
          41554 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE   1:  137:361453

REFERENCE   2:  137:361395

REFERENCE   3:  137:359408
```

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

REFERENCE 4: 137:358067

REFERENCE 5: 137:357855

REFERENCE 6: 137:357805

REFERENCE 7: 137:357795

REFERENCE 8: 137:357768

REFERENCE 9: 137:357718

REFERENCE 10: 137:357702

L91 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2002 ACS
RN **9002-13-5** REGISTRY
CN Urease (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN E.C. 3.5.1.5
CN Urea amidohydrolase
CN Urease LF
MF Unspecified
CI COM, MAN
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
6299 REFERENCES IN FILE CA (1962 TO DATE)
207 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
6311 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:362079

REFERENCE 2: 137:358058

REFERENCE 3: 137:351722

REFERENCE 4: 137:351496

REFERENCE 5: 137:349203

REFERENCE 6: 137:348640

REFERENCE 7: 137:345186

REFERENCE 8: 137:345117

REFERENCE 9: 137:337358

REFERENCE 10: 137:335056

L91 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2002 ACS
RN **7664-41-7** REGISTRY
CN Ammonia (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 20: PN: WO0175077 SEQID: 21 claimed sequence

CN Ammonia gas
CN Ammonia-14N
CN Nitro-Sil
CN R 717
CN Refrigerent R717
CN Spirit of Hartshorn
FS 3D CONCORD
DR 8007-57-6, 208990-07-2, 214478-05-4
MF H3 N
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PHARMASEARCH, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

NH_3

104972 REFERENCES IN FILE CA (1962 TO DATE)
1577 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
105033 REFERENCES IN FILE CAPLUS (1962 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:361835

REFERENCE 2: 137:361616

REFERENCE 3: 137:361608

REFERENCE 4: 137:361579

REFERENCE 5: 137:361570

REFERENCE 6: 137:361507

REFERENCE 7: 137:361505

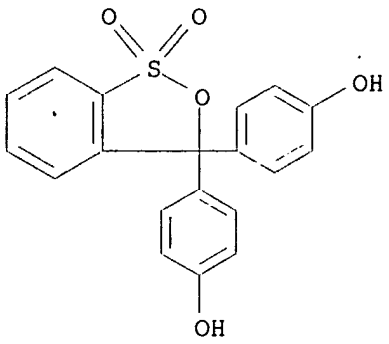
REFERENCE 8: 137:361494

REFERENCE 9: 137:361453

REFERENCE 10: 137:361416

L91 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2002 ACS
RN **143-74-8** REGISTRY
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 3H-2,1-Benzoxathiole, phenol deriv.
CN Phenol, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis-, S,S-dioxide
CN Phenol, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)di-, S,S-dioxide (8CI)
OTHER NAMES:
CN .alpha.-Hydroxy-.alpha.,.alpha.-bis(p-hydroxyphenyl)-o-toluenesulfonic acid .gamma.-sultone
CN 3,3-Bis(p-hydroxyphenyl)-2,1,3H-benzoxathiole 1,1-dioxide

CN 3H-2,1-Benzoxathiole, 3,3-bis(4-hydroxyphenyl)-, 1,1-dioxide
CN Fenolipuna
CN Phenol red
CN Phenolsulfonephthalein
CN Phenolsulfonphthalein
CN Phenolsulphonphthalein
CN PSP
CN PSP (indicator)
CN Sulfonphthal
CN Sulphental
CN Sulphonthal
CN TF-R 2
FS 3D CONCORD
DR 2877-88-5
MF C19 H14 O5 S
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DIOGENES, DRUGU, EMBASE, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1114 REFERENCES IN FILE CA (1962 TO DATE)
27 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1114 REFERENCES IN FILE CAPLUS (1962 TO DATE)
27 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:291290

REFERENCE 2: 137:278481

REFERENCE 3: 137:272515

REFERENCE 4: 137:255496

REFERENCE 5: 137:244300

REFERENCE 6: 137:244282

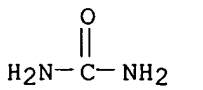
REFERENCE 7: 137:239868

REFERENCE 8: 137:218397

REFERENCE 9: 137:210063

REFERENCE 10: 137:181927

L91 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2002 ACS
RN **57-13-6** REGISTRY
CN Urea (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN B-I-K
CN Benural 70
CN Carbamide
CN Carbamimidic acid
CN Carbonyl diamide
CN Eucerin 10% Urea Lotion
CN Isourea
CN Keratinamin Kowa
CN Optigen 1200
CN Pastaron
CN Pastaron 10
CN Pastaron 20
CN Pastaron 20 soft
CN Pseudourea
CN UR
CN Urea perhydrate
CN Ureaphil
CN Ureophil
CN Urepeal
CN Urepeal L
CN Urepearl
CN Urevert
CN Varioform II
FS 3D CONCORD
DR 30535-50-3
MF C H4 N2 O
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PHAR, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

56846 REFERENCES IN FILE CA (1962 TO DATE)
2958 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
56879 REFERENCES IN FILE CAPLUS (1962 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:361510

REFERENCE 2: 137:361422

REFERENCE 3: 137:360350

REFERENCE 4: 137:358248

REFERENCE 5: 137:358168

REFERENCE 6: 137:357892

REFERENCE 7: 137:357669

REFERENCE 8: 137:357324

REFERENCE 9: 137:357078

REFERENCE 10: 137:356103

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 14:56:46 ON 06 DEC 2002

FILE COVERS 1907 - 6 Dec 2002 VOL 137 ISS 24
FILE LAST UPDATED: 5 Dec 2002 (20021205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all hitstr tot 190

L90 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:125559 HCAPLUS
DN 136:130760
TI Detection method of **Helicobacter pylori** using rapid **urease** detection kit
IN Lee, Jong Wook; Kim, Beom Su; Bae, Su Hwan; Lee, Gyeong Won; Jeong, Yun Seob
PA S. Korea
SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DT Patent
LA Korean
IC ICM C12Q001-04

REFERENCE 2: 137:361422

REFERENCE 3: 137:360350

REFERENCE 4: 137:358248

REFERENCE 5: 137:358168

REFERENCE 6: 137:357892

REFERENCE 7: 137:357669

REFERENCE 8: 137:357324

REFERENCE 9: 137:357078

REFERENCE 10: 137:356103

=> fil hcaplus
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 6 Dec 2002 VOL 137 ISS 24
FILE LAST UPDATED: 5 Dec 2002 (20021205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all hitstr tot 190

L90 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:125559 HCAPLUS
DN 136:130760
TI Detection method of **Helicobacter pylori** using rapid **urease** detection kit
IN Lee, Jong Wook; Kim, Beom Su; Bae, Su Hwan; Lee, Gyeong Won; Jeong, Yun Seob
PA S. Korea
SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DT Patent
LA Korean
IC ICM C12Q001-04

CC 7-1 (Enzymes)
Section cross-reference(s): 10, 14
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2000033013	A	20000615	KR 1998-49668	19981119

AB PURPOSE: Detection kit of **Helicobacter pylori** using rapid **urease** test is provided which is specific and sensitive to detect **urease** of **Helicobacter pylori** in the tissue of stomach from human or animals. CONSTITUTION: **Ammonia** prodn. from the tissue of stomach which is suspended in HCl-KCl buffer not being added **urea** is high enough to detect. Addn. of small amt. of **urea** into the buffer saves the time of test and increases the sensitivity of the test. A test kit comprises acid buffer (**pH** 2.0-5.0) and **indicator**. The acid buffer consists of HCl and KCl. Congo red is used as an **indicator** and the color change from blue to red is pos. sign. The optimal concn. of **indicator** ranges from 50mg/mL to 2g/mL. The amt. of **urea** added into buffer is 50-500mg/mL. The test is performed by only suspension of test tissue in the kit or shaking of the tube.

ST detection **Helicobacter pylori urease** kit

IT Animal
Animal tissue
Buffers
Colorimetry
Concentration (condition)
Helicobacter pylori
Human
Indicators
Mixing
Stomach
Suspensions
Test kits
Time
pH
(detection method of **Helicobacter pylori** using rapid **urease** detection kit)

IT Acids, biological studies
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection method of **Helicobacter pylori** using rapid **urease** detection kit)

IT **14798-03-9**, Ammonium, biological studies
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(detection method of **Helicobacter pylori** using rapid **urease** detection kit)

IT **9002-13-5, Urease**
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection method of **Helicobacter pylori** using rapid **urease** detection kit)

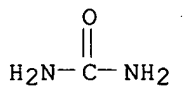
IT **57-13-6, Urea**, biological studies 573-58-0, Congo red
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection method of **Helicobacter pylori** using rapid **urease** detection kit)

IT 7447-40-7, Potassium chloride (KCl), biological studies 7647-01-0, Hydrogen chloride, biological studies
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(detection method of **Helicobacter pylori** using
rapid **urease** detection kit)
IT **14798-03-9**, Ammonium, biological studies
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(detection method of **Helicobacter pylori** using
rapid **urease** detection kit)
RN 14798-03-9 HCAPLUS
CN Ammonium (8CI, 9CI) (CA INDEX NAME)

IT **9002-13-5, Urease**
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection method of **Helicobacter pylori** using
rapid **urease** detection kit)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **57-13-6, Urea**, biological studies
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection method of **Helicobacter pylori** using
rapid **urease** detection kit)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



L90 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN **2001:582293** HCAPLUS
DN **135:133929**
TI Detection of **H. pylori** in the stomach
IN **Marshall, Barry**
PA Australia
SO U.S. Pat. Appl. Publ., 6 pp., Cont.-in-part of U.S. 6,228,605.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12Q001-04
NCL 435034000
CC 7-1 (Enzymes)
Section cross-reference(s): 10, 14
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2001012623	A1	20010809	US 2001-824870	20010403
PRAI US 1995-489816	B1	19950613		
US 1997-832332	A2	19970326		

AB A method for the in vivo detection of **urease**-producing **Helicobacter** in the upper stomach is disclosed. The dense carrier is divided into two sep. groups which are combined with sep. reagent **indicators**, one of which also contains **urea**. The carriers are food sol. products, preferably sugar beads having a diam. of

approx. 0.2 to 3.0 mm. The treated carriers and **urea** are encapsulated in a sol. capsule which is administered to a patient. The d. of the carriers cause the capsule to migrate to the **gastric** mucosa, where the capsule, but not the reagents, is dissolved, placing the reagents and **urea** in direct contact with the **gastric** mucosa. The **urea** reacts with any **urease** present in the stomach by creating **ammonia**, which increases the **pH** in the immediate vicinity of the **urea** contg. carrier and **indicator** beads. The two reagents react differently, through color change, to the increase in **pH**, which is viewed through use of an endoscope. A preferred first reagent is bromothymol blue (dibromothymolsulfonphthalein), which changes yellow in the presence of **urease**, and a preferred second reagent is **phenol red** (**phenolsulfonphthalein**), which turns red in the presence of **urease**.

ST detection **Helicobacter pylori** stomach

IT Capsules
(Sol.; detection of **H. pylori** in stomach)

IT Spheres
(beads; detection of **H. pylori** in stomach)

IT Carriers
Colorimetry
Encapsulation
Endoscopes
Food
Gastric juice
Helicobacter pylori
Stomach
Stomach content
pH
(detection of **H. pylori** in stomach)

IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(detection of **H. pylori** in stomach)

IT Carbohydrates, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(detection of **H. pylori** in stomach)

IT **Stomach**
(mucosa; detection of **H. pylori** in stomach)

IT **9002-13-5, Urease**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection of **H. pylori** in stomach)

IT **57-13-6, Urea**, uses 76-59-5, Bromothymol blue
143-74-8, Phenol red
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(detection of **H. pylori** in stomach)

IT **14798-03-9, Ammonium**, analysis
RL: ARU (Analytical role, unclassified); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
(detection of **H. pylori** in stomach)

IT **9002-13-5, Urease**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detection of **H. pylori** in stomach)

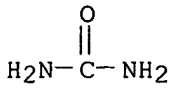
RN 9002-13-5 HCAPLUS

CN Urease (8CI, 9CI) (CA INDEX NAME)

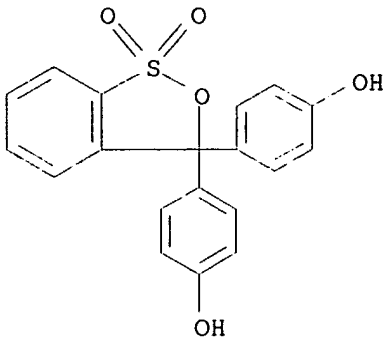
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **57-13-6, Urea**, uses **143-74-8, Phenol red**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(detection of **H. pylori** in stomach)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



RN 143-74-8 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis- (9CI) (CA INDEX NAME)



IT **14798-03-9, Ammonium**, analysis
RL: ARU (Analytical role, unclassified); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
(detection of **H. pylori** in stomach)
RN 14798-03-9 HCAPLUS
CN Ammonium (8CI, 9CI) (CA INDEX NAME)

L90 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 2000:574446 HCAPLUS
DN 133:278129
TI A simple method to determine **urea** concentration using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**
AU Lin, Yuh-Ling; Chen, Chien-Tsu; Lin, Su-Cheng; Lee, Cheng; Kuo, Hsien-Shou; Shih, Chun-Mean; Hsu, Yuan-Hsun; Chin, Yi-Ping; Chan, Err-Cheng
CS Department of Medicine, Taipei Medical College, Taipei, Taiwan
SO Biotechnology Letters (2000), 22(13), 1077-1079
CODEN: BILED3; ISSN: 0141-5492
PB Kluwer Academic Publishers
DT Journal
LA English
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 6, 10, 13
AB A modified method for **urea** quantification, by measuring the **ammonia** formed by **urease**, used the **urease**-pos. **Helicobacter pylori** in place of purified **urease** with a **pH indicator** dye, BromoCresol Purple, to provide a color change. The color formed was stable for 20 min and could

be read at 588 nm for **urea** quantification. Using this method, **urea** std. curves were linear up to 8.3 mM. As there was no need for centrifugation or pptn., the assay was developed for use with 96-well microplates.

ST **urea** detn **Helicobacter** BromoCresol Purple **ammonia**

IT Bioassay
Blood analysis
Blood serum
Helicobacter pylori
Spectrophotometry
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)

IT **57-13-6, Urea**, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)

IT 115-40-2, BromoCresol Purple
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)

IT **7664-41-7, Ammonia**, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

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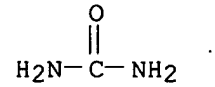
IT **57-13-6, Urea**, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)

RN 57-13-6 HCAPLUS

CN Urea (8CI, 9CI) (CA INDEX NAME)



IT **7664-41-7, Ammonia**, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL

(Biological study); PROC (Process)
(simple method to det. **urea** concn. using intact **Helicobacter pylori** and BromoCresol Purple as a **pH indicator**)
RN 7664-41-7 HCAPLUS
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH_3

L90 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:711352 HCAPLUS
DN 130:48979
TI Development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies
AU Roda, Aldo; Piazza, Francesco; Pasini, Patrizia; Baraldini, Mario; Zambonin, Laura; Fossi, Stefania; Bazzoli, Franco; Roda, Enrico
CS Department of Pharmaceutical Sciences, University of Bologna, Bologna, Italy
SO Analytical Biochemistry (1998), 264(1), 47-52
CODEN: ANBCA2; ISSN: 0003-2697
PB Academic Press
DT Journal
LA English
CC 7-1 (Enzymes)
Section cross-reference(s): 1, 9, 14
AB A chemiluminescent **urease** activity assay has been developed and optimized using the chemiluminescent **pH indicator** phthalhydrazidylazoacetylacetone. This compd. is stable at **pH** .ltoreq. 7 and decomps. at higher **pH** values, emitting light in the presence of H2O2. **Urease** catalyzes hydrolysis of **urea** to form **NH3** and CO2 which increase the **pH** of the reaction medium, thus allowing the chemiluminescent **indicator** to decomp. and produce photons. The emitted light is proportional to the **urease** activity when **urea** is in excess. **Urease** tests based on colorimetric **pH indicators** like **phenol red** are com. available and commonly used for the rapid diagnosis of **Helicobacter pylori** infection in **gastric** mucosa biopsy specimens, since this bacterium produces high amts. of **urease**. Such colorimetric tests often lack sensitivity, giving false-neg. results. The developed chemiluminescent test proved to be at least 50-fold more sensitive than the colorimetric tests, permitting early diagnosis of infection, and it is more rapid, giving results in 1-10 min compared to 30 min. Further applications of this assay could be the in situ localization of **urease** activity, corresponding to the presence of **H. pylori**, in **gastric** mucosa cryosections and the development of high throughput screening assays of antimicrobial drugs able to inactivate the bacterium. (c) 1998 Academic Press.
ST **urease** chemiluminescent assay **Helicobacter gastric** mucosa infection phthalhydrazidylazoacetylacetone
IT Infection
(bacterial; development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)
IT Bioassay
Diagnosis
Helicobacter pylori
Luminescence, chemiluminescence
(development of a chemiluminescent **urease** activity assay for

Helicobacter pylori infection diagnosis in **gastric** mucosa biopsies)

IT **Stomach**
(mucosa; development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)

IT **9002-13-5, Urease**
RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)

IT 109632-03-3P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)

IT 123-54-6, Acetylacetone, reactions 521-31-3, Luminol
RL: RCT (Reactant); RACT (Reactant or reagent)
(development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(43) Westblom, T; J Clin Microbiol 1988, V26, P1393 MEDLINE
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IT **9002-13-5, Urease**
RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in **gastric** mucosa biopsies)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L90 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN **1995:665321** HCAPLUS
DN **123:51695**
TI Detection of **Helicobacter pylori** in the stomach using **urea**- and **indicator**-containing reagents
IN **Marshall, Barry**
PA USA
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K009-28
ICS A61K009-48; A91K009-54; C12Q001-04; C12Q001-58; G01N021-77
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 7
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9511672	A1	19950504	WO 1994-US12332	19941025
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ				
	RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2174933	AA	19950504	CA 1994-2174933	19941025
	AU 9481270	A1	19950522	AU 1994-81270	19941025
	EP 725633	A1	19960814	EP 1995-900448	19941025
	R: AT, CH, DE, GB, IE, LI, LU				
	CN 1139381	A	19970101	CN 1994-194624	19941025
	JP 09506246	T2	19970624	JP 1994-512826	19941025
	BR 9407718	A	19971111	BR 1994-7718	19941025
PRAI	US 1993-142600	A	19931028		
	WO 1994-US12332	W	19941025		

AB A method for the in vivo detection of **urease**-producing **helicobacter** in the upper stomach is disclosed.. The dense carrier is divided into two sep. groups which are combined with sep. reagent

indicators, one of which also contains **urea**. The carriers are food sol. products, preferably sugar beads having a diam. of approx. 0.2 to 3.0 mm. The treated carriers and **urea** are encapsulated in a sol. capsule which is administered to a patient. The d. of the carriers cause the capsule to migrate to the **gastric** mucosa, where the capsule is dissolved, placing the reagents and **urea** in direct contact with the **gastric** mucosa. The **urea** reacts with any **urease** present in the stomach by creating **ammonia**, which increases the **pH** within the stomach. The two reagents react differently, through color change, to the increase in **pH**, which is viewed through use of an endoscope. A preferred first reagent is bromothymol blue (dibromothymolsulfonphthalein) , which changes yellow in the presence of **urease**, and a preferred second reagent is **phenol red** (**phenolsulfonphthalein**) which turns red in the presence of **urease**.

ST **Helicobacter** detection stomach **urea indicator** ; **urease Helicobacter** detection stomach; bromothymol blue **Helicobacter** detection stomach; **phenol red Helicobacter** detection stomach

IT **Helicobacter**
Indicators
Stomach
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

IT Carbohydrates and Sugars, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

IT Food
(sol. food products; **Helicobacter** in vivo detection in stomach with **urea**- and **indicator**-contg. reagents)

IT Medical goods
Optical instruments
(endoscopes, **Helicobacter** in vivo detection in stomach with **urea**- and **indicator**-contg. reagents)

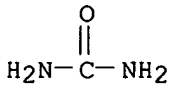
IT **57-13-6, Urea**, uses 76-59-5, Bromothymol blue **143-74-8, Phenol red** 594-05-8, **Urea** -14C 58069-82-2, **Urea**-13C
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

IT **7664-41-7, Ammonia**, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

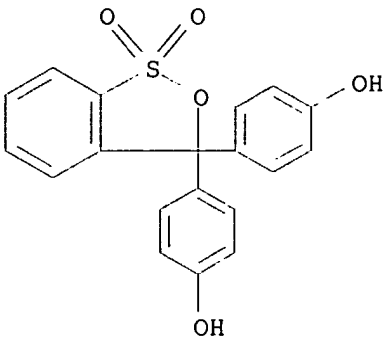
IT **9002-13-5, Urease**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

IT **57-13-6, Urea**, uses **143-74-8, Phenol red**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)

RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



RN 143-74-8 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis- (9CI) (CA INDEX NAME)



IT **7664-41-7, Ammonia,** analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)
RN 7664-41-7 HCAPLUS
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

IT **9002-13-5, Urease**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**Helicobacter** in vivo detection in stomach with **urea** - and **indicator**-contg. reagents)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L90 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1995:661115 HCAPLUS
DN 123:51688
TI Test device and kit for detecting **Helicobacter pylori**
IN Boguslaski, Robert C.; Carrico, Robert J.
PA Serim Research Corporation, USA
SO U.S., 8 pp. Cont.-in-part of U.S. 5,314,804.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-58
ICS C12Q001-04; G01N021-00
NCL 435012000
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 7, 10, 14
FAN.CNT 2
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	US 5420016	A	19950530	US 1994-198236	19940218
	US 5314804	A	19940524	US 1992-856992	19920324
	CA 2131317	C	19980224	CA 1993-2131317	19930303
PRAI	US 1992-856992	A2	19920324		

AB A rapid method and easy-to-use unitized test device are disclosed for detg. the presence of **H. pylori** in a biol. tissue specimen, e.g., human **gastric** mucosa biopsy, by detecting the presence of **urease** in the tissue. The system basically utilizes a multilayer test device for sepg. and optimizing the various reactions involved, i.e. the **urease** in the specimen with a substrate and the **ammonia** generated thereby with an **indicator** element.

ST tissue **Helicobacter pylori urease** detection app; multilayer test element **urease Helicobacter** detection

IT Animal tissue
Buffer substances and systems
Campylobacter pyloridis
Membrane, biological
Paper
Polymer-supported reagents
(test device and kit for detecting **Helicobacter pylori**)

IT **Stomach**
(mucosa, test device and kit for detecting **Helicobacter pylori**)

IT **7664-41-7, Ammonia**, analysis **9002-13-5, Urease**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test device and kit for detecting **Helicobacter pylori**)

IT 115-39-9, Bromophenol blue 5329-14-6, Sulfamic acid
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test device and kit for detecting **Helicobacter pylori**)

IT **57-13-6, Urea**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(test device and kit for detecting **Helicobacter pylori**)

IT **7664-41-7, Ammonia**, analysis **9002-13-5, Urease**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test device and kit for detecting **Helicobacter pylori**)

RN 7664-41-7 HCAPLUS
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

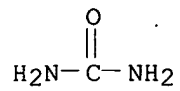
NH_3

RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **57-13-6, Urea**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(test device and kit for detecting **Helicobacter pylori**)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



L90 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1993:645415 HCAPLUS
DN 119:245415
TI Enzymic detection of **Helicobacter pylori** in tissue samples
IN Boguslaski, Robert Charles; Carrico, Robert Joseph
PA Serim Research Corp., USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-58
ICS C12Q001-62; C12Q001-26; C12Q001-04; G01N021-77
CC 10-6 (Microbial, Algal, and Fungal Biochemistry)
Section cross-reference(s): 7, 9
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9319200	A1	19930930	WO 1993-US1819	19930303
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5314804	A	19940524	US 1992-856992	19920324
	AU 9337361	A1	19931021	AU 1993-37361	19930303
	EP 633946	A1	19950118	EP 1993-906267	19930303
	EP 633946	B1	20010801		
	R: DE, DK, FR, GB, IT, SE				
	JP 07505279	T2	19950615	JP 1993-516569	19930303
	JP 2638682	B2	19970806		
	CA 2131317	C	19980224	CA 1993-2131317	19930303
PRAI	US 1992-856992	A	19920324		
	WO 1993-US1819	A	19930303		

AB Measurements of **urease** activity in tissue biopsy samples using test strips are used to detect the presence of **Helicobacter pylori**. This method is faster and more reliable than the prior art CLOtest. The test strips use **urea** as the substrate with the **ammonia** formed passing through a water-impermeable diffusion barrier to react with an **indicator** dye whilst preventing the movement of other materials from the sample that could give a false pos. result. Test strips were prepd. with a substrate element of rayon fabric impregnated with sodium phosphate buffer (100 mM, **pH** 8.0), **urea** 100 mM, a diffusion element of hydrophobic Versapel 10000 membrane, and an **indicator** element of Versapor 10000 impregnated with bromophenol blue and sulfamic acid. Using cotton wound polyester thread impregnated with jack bean **urease** as a test material, these strips detected levels of activity that were undetectable with the CLOtest system, or activities that were detectable in 20 min with the test strip required 24 h for a pos. result with CLOtest.
ST **Helicobacter** detection **urease** test strip assay
IT **Campylobacter pyloridis**
(detection in tissue samples of, **urease** as **indicator** for, test strips for)

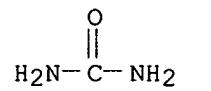
IT Apparatus
(test-strips, for detection of **urease** in biopsy samples for detection of **Helicobacter pylori**)
IT **9002-13-5, Urease**
RL: BIOL (Biological study)
(as **indicator** for **Helicobacter pylori** in tissue samples, test strips for)
IT **7664-41-7, Ammonia**, biological studies
RL: BIOL (Biological study)
(detection with sulfamic acid and **pH** sensitive stains of, in test strips for detection of **urease** activity in detection of **Helicobacter pylori**)
IT 5329-14-6, Sulfamic acid
RL: BIOL (Biological study)
(reaction with **ammonia** of, in test strips for detection of **urease** activity)
IT **9002-13-5, Urease**
RL: BIOL (Biological study)
(as **indicator** for **Helicobacter pylori** in tissue samples, test strips for)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7664-41-7, Ammonia**, biological studies
RL: BIOL (Biological study)
(detection with sulfamic acid and **pH** sensitive stains of, in test strips for detection of **urease** activity in detection of **Helicobacter pylori**)
RN 7664-41-7 HCAPLUS
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH_3

L90 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1991:3292 HCAPLUS
DN 114:3292
TI **Urea** protects **Helicobacter** (**Campylobacter**) **pylori** from the bactericidal effect of acid
AU **Marshall, B. J.**; Barrett, L. J.; Prakash, C.; McCallum, R. W.; Guerrant, R. L.
CS Dep. Med., Univ. Virginia, Charlottesville, VA, 22908, USA
SO Gastroenterology (1990), 99(3), 697-702
CODEN: GASTAB; ISSN: 0016-5085
DT Journal
LA English
CC 10-5 (Microbial Biochemistry)
AB Colonization of the stomach with **H. pylori** is common in patients with duodenal ulcers, which is known for its high acid secretion. Although the bacterium is usually isolated by culture of a **gastric** biopsy specimen, viable organisms may sometimes be found in the acidic **gastric** juice. It was postulated that **urease**, by generating **NH3**, protected **H. pylori** from acid. To test this hypothesis, the **pH** susceptibility of **H. pylori**, Proteus mirabilis, and the **urease**-neg. **Campylobacter** jejuni was examd. in the presence and absence of **urea**. It was found that without **urea** the 3 bacteria were all highly susceptible to acid. In striking contrast, the addn. of 5 mM **urea** completely protected **H. pylori**, but not P. mirabilis or C. jejuni, from

pH values .gtoreq.1.5. The protective effect of **urea** on **H. pylori** was found with **urea** concns. .gtoreq.0.05 mM. The high **urease** activity of **H. pylori** apparently enables it to survive in **gastric** acid.
ST acid protection **urea urease Helicobacter**
IT **Campylobacter pyloridis**
(**gastric** acid effect on, **urea** protection against)
IT **57-13-6, Urea**, biological studies
RL: BIOL (Biological study)
(in protection of **Helicobacter pylori** against **gastric** acid)
IT **9002-13-5, Urease**
RL: BIOL (Biological study)
(of **Helicobacter pylori**, protection against **gastric** acid by)
IT **57-13-6, Urea**, biological studies
RL: BIOL (Biological study)
(in protection of **Helicobacter pylori** against **gastric** acid)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



IT **9002-13-5, Urease**
RL: BIOL (Biological study)
(of **Helicobacter pylori**, protection against **gastric** acid by)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L90 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1990:548382 HCAPLUS
DN 113:148382
TI Compositions and methods for the enrichment and isolation of **Campylobacter pylori** and related organisms
IN **Marshall, Barry J.**; Guerrant, Richard L.
PA University of Virginia Alumni Patents Foundation, USA
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-58
ICS C12Q001-04; C12Q001-34; C12Q001-24
NCL 435012000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 10
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4923801	A	19900508	US 1987-37938	19870413

AB **C. pylori** is enriched and isolated from a specimen contaminated with other organisms by (a) homogenizing the specimen (e.g. **gastric** biopsy, stool) with water; (b) introducing the specimen into a soln. of **urea** at **pH** .ltoreq.2.5 to kill nonurease-producing and some **urease**-producing organisms and to destroy preformed extracellular **urease**; (c) plating the

remaining **urease**-producing organisms onto a medium which contains antibiotics inhibitory to most of the remaining **urease** -producing organisms, but not inhibitory to **C. pylori**, and (d) detecting colonies of **C. pylori**. Stool inoculated with **C. pylori** was homogenized with saline and then mixed with 5 mM **urea** acidified to **pH** 1.6 with H2SO4. After 5 min at room temp., the specimen was plated onto nonselective blood agar and cultured for 3 days. After 3 days there were colonies of **C. pylori** and very few contaminating organisms on the plate.

ST **Campylobacter** isolation acid **urea**

IT Antibiotics
(in **Campylobacter pylori** enrichment and isolation with **urea** and acids)

IT **Campylobacter pyloridis**
(isolation of, **urea** and acids in)

IT Acids, biological studies
RL: BIOL (Biological study)
(**Campylobacter pylori** enrichment and isolation in presence of **urea** and)

IT Microorganism
(**Campylobacter pylori** isolation and identification from, **urea** and acid in)

IT **Stomach**
(**Campylobacter pylori** isolation from biopsy of, **urea** and acids in)

IT Feces
(**Campylobacter pylori** isolation from, **urea** and acids in)

IT **Indicators**
(**acid-base**, in **Campylobacter pylori** enrichment and isolation with **urea** and acids)

IT **7664-41-7, Ammonia**, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, in **Campylobacter pylori** enrichment and isolation)

IT **9002-13-5, Urease**
RL: FORM (Formation, nonpreparative)
(formation of, **Campylobacter pylori** enrichment and isolation in relation to)

IT **57-13-6, Urea**, biological studies
RL: BIOL (Biological study)
(**Campylobacter pylori** enrichment and isolation in presence of acids and)

IT **7664-41-7, Ammonia**, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, in **Campylobacter pylori** enrichment and isolation)

RN 7664-41-7 HCAPLUS

CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH_3

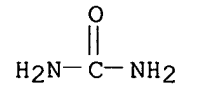
IT **9002-13-5, Urease**
RL: FORM (Formation, nonpreparative)
(formation of, **Campylobacter pylori** enrichment and isolation in relation to)

RN 9002-13-5 HCAPLUS

CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **57-13-6, Urea,** biological studies
RL: BIOL (Biological study)
(**Campylobacter pylori** enrichment and isolation in presence of acids and)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



L90 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1987:115736 HCAPLUS
DN 106:115736
TI Compositions, methods, and device for the detection of **urease** for the diagnosis of a **Campylobacter pyloridis** infection
IN **Marshall, Barry James**
PA Australia
SO Eur. Pat. Appl., 25 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C12Q001-58
ICA G01N033-52; C12Q001-04
CC 7-1 (Enzymes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 204438	A2	19861210	EP 1986-303493	19860508
	EP 204438	A3	19870527		
	EP 204438	B1	19910306		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AU 8657398	A1	19861120	AU 1986-57398	19850517
	AU 601363	B2	19900913		
	US 4748113	A	19880531	US 1985-744840	19850613
	CA 1274757	A1	19901002	CA 1986-508415	19860505
	AT 61414	E	19910315	AT 1986-303493	19860508
	ZA 8603605	A	19880127	ZA 1986-3605	19860515
	DK 8602283	A	19861118	DK 1986-2283	19860516
	DK 173710	B1	20010709		
	NO 8601966	A	19861118	NO 1986-1966	19860516
	NO 170091	B	19920601		
	NO 170091	C	19920909		
	BR 8602243	A	19870113	BR 1986-2243	19860516
	JP 62026000	A2	19870203	JP 1986-112427	19860516
	JP 06095960	B4	19941130		
PRAI	AU 1985-611	A	19850517		
	US 1985-744840	A	19850613		
	EP 1986-303493	A	19860508		

AB A reagent compn. for the detection of preformed **urease** for diagnosis of **gastrointestinal** disorders caused by **C. pyloridis** infection in a human or lower animal contains (1) **urea,** (2) a bactericide, (3) a **pH indicator** for detecting an increase in **pH,** and (4) water, where the compn. has a **pH** of .gtoreq.5.0, which is .gtoreq.1 unit lower than the pKa of the **indicator.** A reagent compn. contained **urea** 20, NaN3 1, agar 20 g/L, and **phenol red** 60 mg/L; the **pH** was adjusted to 5.50. Injection of a sample of vomitus from a human infant suspected of having **gastritis** into the gelled

reagent compn. resulted in a change in the color of the **pH indicator** within 20 min.

ST reagent **Campylobacter** infection diagnosis; **urease** detection **Campylobacter** infection diagnosis; **gastrointestinal** disorder **Campylobacter urease** detection

IT Bactericides, Disinfectants, and Antiseptics
(in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

IT **Campylobacter pyloridis**
(**urease** of, detection of, in **gastrointestinal** disorder diagnosis, reagents for)

IT **Indicators**
(acid-base, in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

IT **Digestive tract**
(**disease**, diagnosis of, by **Campylobacter urease** detection, reagents for)

IT 26628-22-8, Sodium azide 29468-36-8
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(as bactericide, in reagent for **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

IT **143-74-8, Phenol red**
RL: BIOL (Biological study)
(as **pH indicator**, in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

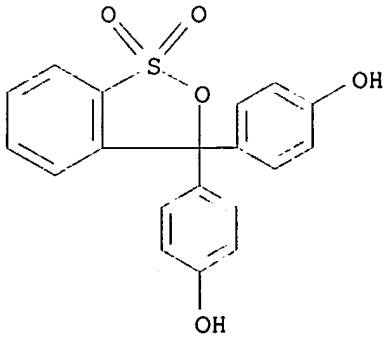
IT **9002-13-5, Urease**
RL: ANT (Analyte); ANST (Analytical study)
(detection of, of **Campylobacter** in **gastrointestinal** disorder diagnosis, reagents for)

IT **57-13-6, Urea**, uses and miscellaneous
RL: USES (Uses)
(in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

IT **143-74-8, Phenol red**
RL: BIOL (Biological study)
(as **pH indicator**, in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)

RN 143-74-8 HCAPLUS

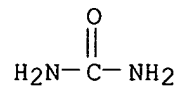
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis- (9CI) (CA INDEX NAME)



IT **9002-13-5, Urease**
RL: ANT (Analyte); ANST (Analytical study)
(detection of, of **Campylobacter** in **gastrointestinal**

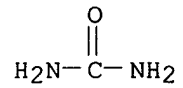
disorder diagnosis, reagents for)
RN 9002-13-5 HCAPLUS
CN Urease (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **57-13-6, Urea**, uses and miscellaneous
RL: USES (Uses)
(in **Campylobacter urease** detection for **gastrointestinal** disorder diagnosis)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



L90 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2002 ACS
AN 1977:86739 HCAPLUS
DN 86:86739
TI Mitochondrial and cytosolic NADPH systems and isocitrate dehydrogenase **indicator** metabolites during ureogenesis from **ammonia** in isolated rat hepatocytes
AU Sies, Helmut; Akerboom, Theodorus P. M.; Tager, Joseph M.
CS Inst. Physiol. Chem. Phys. Biochem. Zellbiol., Univ. Muenchen, Munich, Ger.
SO Eur. J. Biochem. (1977), 72(2), 301-7
CODEN: EJBCAI
DT Journal
LA English
CC 13-2 (Mammalian Biochemistry)
Section cross-reference(s): 6
AB Citrate, isocitrate, and 2-oxoglutarate levels were detd. in isolated rat hepatocytes and in particulate and sol. fractions thereof. When calcd. from isocitrate-to-2-oxoglutarate ratios (**indicator** metabolite method), the redox potential of mitochondrial free NADPH was -204 mV, whereas that of the extramitochondrial (cytosolic) space was .apprx.10 mV more pos., -392 mV. Addn. of **NH3** (either as NH4Cl or from **urea** + **urease**) to isolated hepatocytes caused preferential oxidn. of mitochondrial of NADPH. The redox potential difference of free NADPH between mitochondria and cytosol was abolished or even reversed. Thus, during ureogenesis from **NH3** mitochondrial isocitrate oxidn. is shifted in favor of the NADP-linked as opposed to the NAD-linked enzyme; isocitrate concn. under these conditions was <10 .mu.M, below the Km (isocitrate) of the NAD-linked enzyme but in range of that for the NADP-linked enzyme. Both in the absence and in the presence of **NH3** there was a concn. gradient across the mitochondrial inner membrane (from mitochondria to cytosol) for citrate, isocitrate, and, to a smaller extent, for 2-oxoglutarate. There appears to be near equil. of NADP-dependent isocitrate dehydrogeneases in the mitochondrial matrix and cytosolic spaces in the absence of **NH3**; accordingly, during **urea** formation from added **NH3** the redox potential of mitochondrial free NADPH is increased to -391 mV or possibly even higher.
ST isocitrate dehydrogenase ureogenesis liver; liver ureogensis **ammonia**
IT Cytoplasm
Mitochondria
(NADPH of, of liver during ureogenesis from **ammonia**)
IT **Liver, metabolism**
(**urea** formation from **ammonia** by, cytosol and mitochondrial NADPH systems in relation to)

IT Electric potential
(redox, of NADPH during ureogenesis)
IT **57-13-6**, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, from **ammonia** by liver)
IT 53-57-6P
RL: PREP (Preparation)
(of liver cytoplasm and mitochondria during ureogenesis from **urea**)
IT 320-77-4P
RL: PREP (Preparation)
(of liver mitochondria during ureogenesis from **ammonia**)
IT 9028-48-2P
RL: PREP (Preparation)
(of mitochondria of liver during ureogenesis from **ammonia**)
IT **7664-41-7**, biological studies
RL: BIOL (Biological study)
(**urea** formation from, by liver)
IT **57-13-6**, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, from **ammonia** by liver)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



IT **7664-41-7**, biological studies
RL: BIOL (Biological study)
(**urea** formation from, by liver)
RN 7664-41-7 HCAPLUS
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

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FILE LAST UPDATED: 4 DEC 2002 <20021204/UP>
MOST RECENT DERWENT UPDATE: 200278 <200278/DW>
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=> d all abeq tech abex tot l116

L116 ANSWER 1 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 2002-588403 [63] WPIX
DNC C2002-166451
TI New method of diagnosing **Helicobacteriosis** comprises monitoring **urease** activity in tissue samplings and body fluids via a color reaction test.
DC B04 D16
IN DMITRIENKO, M A; KORNIENKO, E A; MILEIKO, V E
PA (DMIT-I) DMITRIENKO M A; (KORN-I) KORNIENKO E A; (MILE-I) MILEIKO V E
CYC 1
PI RU 2184781 C2 20020710 (200263)* C12Q001-04
ADT RU 2184781 C2 RU 1997-117123 19970930
PRAI RU 1997-117123 19970930
IC ICM C12Q001-04
ICS C12Q001-00
AB RU 2184781 C UPAB: 20021001
NOVELTY - New method of diagnosing **Helicobacteriosis** comprises monitoring **urease** activity in tissue samplings and body fluids, using a color reaction test on solid sorbent comprising the interaction of an acid-base **indicator** and products of **urea**-to-**ammonia** hydrolysis caused by endogenous **urease** of the microorganisms.
USE - For the diagnosis of **Helicobacteriosis**, especially **Helicobacter pylori**.
ADVANTAGE - The method allows rapid diagnosis.
Dwg.0/0
FS CPI
FA AB
MC CPI: B04-B04D; B04-B04G; B04-B04L; B10-A13C; B10-B04B; B11-C08; B12-K04A4; D05-H04; D05-H09
TECH UPTX: 20021001
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: **Ammonia** is fixed by solid capillary or grainy sorbent.
Method allows is conducted using a device that allows express analysis of tissue samplings, body fluids, and aerosols.
The **urea** and acid-base **indicator** are deposited on solid hygroscopic fibrous or grainy microcapillary sorbent in the form of a homogenous fine-crystal dispersion.

L116 ANSWER 2 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 2001-464387 [50] WPIX
CR 2001-335013 [35]
DNC C2001-140251
TI A device for the in vivo detection of **urease**-producing **Helicobacter** in the stomach.
DC B04 D16
IN **MARSHALL, B**
PA (MARS-I) MARSHALL B
CYC 1
PI US 2001012623 A1 20010809 (200150)* 6p C12Q001-04
US 6479278 B2 20021112 (200278) C12M001-34
ADT US 2001012623 A1 Cont of US 1995-489816 19950613, CIP of US 1997-832332 19970326, US 2001-824870 20010403; US 6479278 B2 Cont of US 1995-489816 19950613, CIP of US 1997-832332 19970326, US 2001-824870 20010403
FDT US 2001012623 A1 CIP of US 6228605; US 6479278 B2 CIP of US 6228605
PRAI US 2001-824870 20010403; US 1995-489816 19950613; US 1997-832332 19970326

IC ICM C12M001-34; C12Q001-04
AB US2001012623 A UPAB: 20021204
NOVELTY - A diagnostic device for the in vivo detection of **urease** -producing **Helicobacter** in the upper stomach, is new.
DETAILED DESCRIPTION - A diagnostic device for the detection of **urease** producing **Helicobacter** in a subjects stomach comprising a soluble carrier containing a combination of a pH **indicator** (pHI1) with a pH range of 5.5-9.0 (pHI1 has an first indicium to indicate an alkaline pH range and a second indicium to indicate an acidic pH range) and a second pH **indicator** (pHI2) with a pH range of 5.5-9.0 (pHI2 has a first indicium to indicate an acidic pH and a third indicium to indicate an alkaline pH range, and a reagent which reacted with **urease** to produce **ammonia**).
The pHI1 first indicium and the pHI2 first indicium are the same. The pHI1 second indicium and the pHI2 third indicium are different from one anther and from the pHI1 and pHI2 first indicia. The pHI1 and pHI2 **indicator** combination react to a presence or absence of **urease** producing **Helicobacter** by change, or lack of change of indicia.
If pHI1 and pHI2 combine to indicate an acidic pH, this indicates an absence of the **Helicobacter** (the stomach is acidic and there are no **urease**-producing **Helicobacter**. If the pHI1 and pHI2 combine to indicate an alkaline pH, this indicates that the stomach is alkaline and no determination can be made, therefore producing a false positive result.
If the pHI1 indicates an acidic pH and the pHI2 indicates an alkaline pH, this indicates the presence of **ammonia** and the presence of **urease** producing **Helicobacter**.
USE - The device is used for the in vivo detection of **urease** -producing **Helicobacter** in the stomach.
ADVANTAGE - The device is used in vivo, eliminating the need for a biopsy.
Dwg.0/1
FS CPI
FA AB; DCN
MC CPI: B04-C01; B04-F10; B04-L01; B04-N04; B11-A02; B11-C08E1; B11-C08E3; B12-K04A4; B12-K04E; D05-A02; D05-H04; D05-H08; D05-H09; D05-H10
TECH UPTX: 20010905
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: The device further comprises first and second dense carriers which are soluble in gastric fluids and have densities that cause them to descend through the stomachs fluids to the stomach's gastric mucosa. The first dense carrier is combined with the pHI1 and the second dense carrier is combined with the pHI2. The container is a soluble capsule comprising the first carrier and second carrier. The dense carrier materials sorb the **indicators** and dissolve in the gastric fluids within 5 minutes after reaching the stomach's gastric mucosa. The dense carrier materials are in the form of beads which facilitate the dispersal of the **indicators** over the mucosa.
The indicium is color. The pHI1 first indicium is one color at an acidic pH and the second indicium is a second color at an alkaline pH. The pHI2 first indicium is one color at an acidic pH and the second indicium is a third color at an alkaline pH. each of the pHI1 first indicium, and the pHI2 first indicium can be the same color and/or the pHI1 second indicium and the pHI2 third indicium are different colors from one another and from the pHI1 first indicium and the pHI2 first indicium.
Th reagent is **urea**.
ABEX
ADMINISTRATION - The device may be swallowed by the patient.

EXAMPLE - Beads comprising bromothymol blue indicator, buffer (pH 6) and sugar beads and phenol red indicator, buffer (pH 6), sugar beads and urea were encapsulated into a quick dissolving gelatin capsule for delivery

into the stomach in mass and undiluted.

L116 ANSWER 3 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 2001-335013 [35] WPIX
CR 1995-178631 [23]; 2001-464387 [50]
DNC C2001-103414
TI Detecting **urease**-producing **Helicobacter** in a patient's stomach, by administering encapsulated dense carrier treated with reagent **indicators**, one containing **urea**, and observing color changes in the gastric mucosa.
DC B04 D16
IN **MARSHALL, B J**
PA (MARS-I) MARSHALL B J
CYC 1
PI US 6228605 B1 20010508 (200135)* 8p C12Q001-04
ADT US 6228605 B1 CIP of US 1993-142600 19931028, Cont of US 1995-489816 19950613, US 1997-832332 19970326
PRAI US 1995-489816 19950613; US 1993-142600 19931028; US 1997-832332 19970326
IC ICM C12Q001-04
AB US 6228605 B UPAB: 20010905
NOVELTY - Detecting **urease**-producing **Helicobacter** in a patient's stomach using a dense carrier (C) which is divided into 2 separate groups which are combined with separate reagent **indicators**, one of which contains **urea** (U), administering (C) and (U) encapsulated in a solid capsule (SC) to the patient, dissolving SC in stomach fluids, contacting the reagents with a gastric mucosa and observing color changes.

DETAILED DESCRIPTION - Detecting (M), in vivo, the presence or absence of **urease** producing **Helicobacter** in a patient's stomach involves:

(a) administering to a patient a pharmaceutically acceptable soluble container containing a combination comprising a first **indicator** having a pH indicium range of from about 5.5-9.0 and having a first indicium for indicating an acidic pH range and a second indicium for indicating an alkaline pH, and a second **indicator** combination, where the second **indicator** combination has a second pH **indicator** having a pH indicium range of from about 5.5-9.0 and having a second pH **indicator** first indicium for indicating an acidic pH range and a second pH **indicator** third indicium for indicating an alkaline pH range, and a reagent to react with **urease** in the stomach to form an alkaline product, the first pH **indicator** first indicium and the second pH **indicator** combination first indicium being the same, the first pH **indicator** second indicium and the second pH **indicator** combination third indicium being different from one another, from the first pH **indicator** first indicium and from the second pH **indicator** first indicium;

(b) dissolving the soluble container in the patients stomach fluids;

(c) contacting the patients gastric mucosa with the first pH **indicator** and the second **indicator** combination; and

(d) observing the first pH **indicator** and the second **indicator** combination in the patient's stomach where if:

(i) the first pH **indicator** first indicium and the second **indicator** combination first indicium indicate an acidic pH range, then the stomach is acidic, indicating an absence of **urease** producing **Helicobacter**;

(ii) the first pH **indicator** second indicium and the second **indicator** combination third indicium indicate an alkaline pH range, then the stomach is alkaline, and thus no determination can be made regarding the presence or absence of **urease** producing **Helicobacter**; or

(iii) the first pH **indicator** first indicium indicates an

acidic pH range and the second **indicator** combination third indicium indicates an alkaline pH range, then the stomach is acidic indicating the presence of **urease** producing **Helicobacter**
.

USE - (M) Is useful for diagnosing gastrointestinal disorders caused by **urease** producing **Helicobacter** by determining the presence or absence of **urease** within a subject's stomach by:

(a) administering to the subject between approximately 1 and 20 g of **urea**/kg of dense, pharmaceutically acceptable carrier, the carrier having a density greater than body fluids, the **urea** being carried by the dense carrier;

(b) drinking a predetermined quantity of a liquid, delivering the capsule through stomach fluids to the subject's gastric mucosa, the dense carrier causing the first pH **indicator**, the second pH **indicator** and the **urea** to descent through the stomach fluids;

(c) dissolving the capsule in gastric juices contained in the subjects stomach, thus placing the carrier, the pH **indicators** and the **urea** in direct contact with the gastric mucosa;

(d) reacting the **urea** with any **urease** present to produce **ammonia**, thus raising the pH proximate to the **indicators** within the subject's stomach; and

(e) viewing the first pH **indicator** indicium and the second pH **indicator** indicium for an indication of pH change, the pH change indicating the absence or presence of **Helicobacter**, where when viewed if:

(i) the first indicium of the first pH **indicator** and the first indicium of the second pH **indicator** are a color that indicate an acidic range, then there is an absence of **urease** and a negative indication of the presence of the **Helicobacter**;

(ii) the second indicium of the first pH **indicator** and the third indicium of the second pH **indicator** are a color which indicate an alkaline pH range, then no determination regarding a gastrointestinal disorder can be made; or

(iii) the first indicium of the first **indicator** is a color that indicates an acidic range and the third indicium of the second pH **indicator** is a color that indicates **urea** in the second pH **indicator** combination is reacting with the **urease** to create an alkaline pH, then there is a positive indication of a presence of **Helicobacter**, thus indicating a **Helicobacter** caused gastrointestinal disorder.

An acidic fluid is further administered to the subject prior to administering the capsule, thus eliminating false positive readings (claimed).

Dwg.0/1

FS CPI

FA AB; DCN

MC CPI: B04-C01; B04-F10; B04-L05; B04-N03; B11-A02; B11-C08E1; B11-C08E3; B11-C09; B12-K04A4; B12-K04E; D05-A02C; D05-H04; D05-H08; D05-H09; D05-H10

TECH UPTX: 20010625

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: Both the first **indicator** and the second **indicator** combination are carried by a pharmaceutically acceptable dense carrier having a density greater than body fluids, the pharmaceutically acceptable dense carrier delivering the first **indicator** and the second **indicator** combination to the gastric mucosa. The dense carrier is dissolved in the gastric fluids after the soluble container is dissolved. The pharmaceutically acceptable carrier is sugar beads, and carrier has a diameter from about 0.2-3.0 mm, thus facilitating dispersal of the **indicators** over the gastric mucosa.

A first portion of the carrier is coated with the first **indicator** and a second portion of the carrier is coated with the second

indicator combination. The first **indicator** is sorbed by a first portion of the carrier and the second **indicator** combination is sorbed by a second portion of the carrier. A buffer is added to the dense carrier in order to neutralize the pH of the dense carrier. The reagent is **urea**, and the **urea** reacts with the **urease** produced by **Helicobacter** to generate **ammonia**. The first pH **indicator** and the second pH **indicators** are weak acids that exhibit a first color that indicates an acid pH range and a second color that indicates an alkaline range.

The first pH **indicator** is bromothymol blue (dibromothymolsulfonphthalein) and the second pH **indicator** is **phenol red** (**phenolsulfonphthalein**). (M)

preferably involves:

(a) providing at least two separate groups of pharmaceutically acceptable pH **indicator** sorbing dense carriers having a density greater than body fluids to cause the carriers to descend through the patient's gastric fluids to the patient's gastric mucosa;

(b) combining a first of the two separate groups of dense carriers with a pharmaceutically acceptable first pH **indicator** that exhibits a first indicium when exposed to an acidic pH range and a second indicium when exposed to an alkaline pH range;

(c) combining a second of the two separate groups of dense carriers with a combination of a pharmaceutically acceptable second pH **indicator** and **urea**, the second pH **indicator** exhibiting a first indicium when exposed to an acidic pH range and a third indicium when exposed to an alkaline pH range, the first pH **indicator** first indicium and the second pH second **indicator** first indicium being the same, the first pH **indicator** second indicium and the second pH **indicator** combination third indicium being different from one another and from the first pH **indicator** first indicium and the second pH **indicator** first indicium;

(d) administering the first dense carrier and the second dense carrier to a patient;

(e) contacting the patient's gastric mucosa with the first **indicator**, the second **indicator** and the **urea** contained within the carriers;

(f) raising pH levels proximate to the second pH **indicator** and **urea** in response to the increased **ammonia** generated by a reaction between the **urea** and the **urease**;

(g) observing the indication of **urease** producing **Helicobacter** in the patient's stomach by observing the first pH **indicator** and the second pH **indicator** combination,

where:

(i) both the first indicium of the first **indicator** and the first indica of the second **indicator** combination indicating an acidic pH range indicating an absence of **Helicobacter** and that the stomach is acidic;

(ii) both the second indicium of the first **indicator** and the second indicium of the second **indicator** combination indicating a false positive result and that the stomach is alkaline; or

(iii) the second indicium of the first **indicator** indicating an acidic pH range and the second indicium of the second **indicator** combination indicating an alkaline pH range, signifies the presence of **urease** producing **Helicobacter** and that the stomach is acidic;

(h) determining, based on observation (i), that the stomach is acidic and that there is an absence of **urease** producing **Helicobacter**, observation (ii), that the stomach is alkaline and no determination can be made, or observation (iii), that there is a presence of **urease** producing **Helicobacter** in the patient's stomach.

ABEX

EXAMPLE - No relevant example is given.

L116 ANSWER 4 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **2000-560698** [52] WPIX
DNN **N2000-415093** DNC **C2000-167388**
TI Measurement of **urea** nitrogen for diagnosing renal diseases, comprises detecting an optical change in pH in the liquid phase by **ammonia** formed by reacting **urea** in liquid phase containing specific buffer solutions.
DC B04 D16 S03
PA (IATR) IATRON LAB INC
CYC 1
PI JP 2000189196 A 20000711 (200052)* 5p C12Q001-58 <--
ADT JP 2000189196 A JP 1998-376480 19981225
PRAI JP 1998-376480 19981225
IC ICM **C12Q001-58**
ICS G01N033-62
AB JP2000189196 A UPAB: 20001018
NOVELTY - Measurement of **urea** nitrogen comprises reacting **urea** and **urease** in liquid phase containing two or more kinds of buffer solutions and detecting optically the change in pH in liquid phase by **ammonia** formed in the reaction.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the reagent for **urea** nitrogen measurement.
USE - For diagnosing renal diseases.
ADVANTAGE - Wide range of concentration of **urea** nitrogen is determined. The liquid reagent is inexpensive and stable for long duration. The effect of measurement of **urea** nitrogen is improved.
Dwg.1/2
FS CPI EPI
FA AB; GI; DCN
MC CPI: B04-B04B1; B04-L05; B10-A01; B10-A13C; B11-C07B1; B11-C08E3; B12-K04A; D05-A02C; D05-H09
EPI: S03-E14H

L116 ANSWER 5 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 2000-221147 [19] WPIX
DNN N2000-165428
TI Fabrication of an encapsulated pharmaceutical detecting **urease** in the stomach - for identification of helicobacter pilori infection by means of phenol sulphonethalein and thymol sulphone thalein reagents, with buffer and saccharose and **urea** modified by carbon 14.
NoAbstract.
DC S03
IN **MARSHALL, B J**
PA (MARS-I) MARSHALL B J
CYC 1
PI MX 9703147 A1 19981001 (200019)* G01N033-573
ADT MX 9703147 A1 MX 1997-3147 19970429
PRAI MX 1997-3147 19970429
IC ICM G01N033-573
FS EPI
FA NOAB
MC EPI: S03-E14H4

L116 ANSWER 6 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 1995-206245 [27] WPIX
CR 1993-320766 [40]
DNN N1995-161623 DNC C1995-095613
TI Device for detecting **Helicobacter pylori** by measuring **urease** levels - comprises a **urease** substrate, an **ammonia**-sensitive **indicator** and sulphamic acid.

DC B04 D16 S03
IN BOGUSLASKI, R C; CARRICO, R J
PA (SERI-N) SERIM RES CORP
CYC 1
PI US 5420016 A 19950530 (199527)* 8p C12Q001-58 <--
ADT US 5420016 A CIP of US 1992-856992 19920324, US 1994-198236 19940218
FDT US 5420016 A CIP of US 5314804
PRAI US 1994-198236 19940218; US 1992-856992 19920324
IC ICM **C12Q001-58**
ICS C12Q001-04; G01N021-00
AB US 5420016 A UPAB: 19950712
Multilayer test device for detecting **urease** in biological tissue specimens comprises: (a) a substrate element comprising a matrix contg. a **urease** substrate; (b) a diffusion element comprising a **NH3** -permeable and water-impermeable membrane; (c) an **indicator** element comprising a matrix contg. a **NH3**-sensitive **indicator**. The **indicator** and diffusion elements are contiguous and one contains sufficient sulphamic acid to react with **NH3** to produce a desired sensitivity. The device is designed so that the tissue specimen can be placed between the substrate and diffusion elements. Also claimed is a test kit comprising an aq. rehydrating soln., a buffer with a pH of 7-9 and a device as above where the **indicator** is the dried residue of a pH **indicator** with a pKa of 2-6.
USE - The device may be used to detect **urease**-producing microorganisms, esp. **Helicobacter pylori**, in human gastric mucosa biopsy specimens.
ADVANTAGE - The sulphamic acid is included to scavenge pre-existing **NH3** so that only **urease**-generated **NH3** is detected.
Dwg.1/5
FS CPI EPI
FA AB; GI; DCN
MC CPI: B04-B04L; B04-F10A; B04-L05; B05-C03; B11-C08E1; B12-K04A; D05-H04
EPI: S03-E09E; S03-E14H6

L116 ANSWER 7 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 1995-178631 [23] WPIX
CR 2001-335013 [33]
DNN N1995-140283 DNC C1995-082674
TI In vivo detection of **urease**-producing **Helicobacter** - using two reagents which react differently, through colour change, to the increase in pH.
DC B04 D16 S03
IN **MARSHALL, B; MARSHALL, B J**
PA (MARS-I) MARSHALL B; (MARS-I) MARSHALL B J
CYC 60
PI WO 9511672 A1 19950504 (199523)* EN 16p A61K009-28
RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ
W: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA US UZ VN
AU 9481270 A 19950522 (199534) A61K009-28
EP 725633 A1 19960814 (199637) EN A61K009-28
R: AT CH DE GB IE LI LU
JP 09506246 W 19970624 (199735) 17p C12Q001-58 <--
BR 9407718 A 19971111 (199801) A61K009-28
CN 1139381 A 19970101 (199809) A61K009-28
ADT WO 9511672 A1 WO 1994-US12332 19941025; AU 9481270 A AU 1994-81270 19941025; EP 725633 A1 WO 1994-US12332 19941025, EP 1995-900448 19941025; JP 09506246 W WO 1994-US12332 19941025, JP 1995-512826 19941025; BR 9407718 A BR 1994-7718 19941025, WO 1994-US12332 19941025; CN 1139381 A CN 1994-194624 19941025

FDT AU 9481270 A Based on WO 9511672; EP 725633 A1 Based on WO 9511672; JP 09506246 W Based on WO 9511672; BR 9407718 A Based on WO 9511672
PRAI US 1993-142600 19931028
REP US 5262156; US 5314804
IC ICM A61K009-28; **C12Q001-58**
ICS A61K009-48; A61K009-54; C12Q001-04; G01N021-77
AB WO 9511672 A UPAB: 20010625
In vivo detection of **urease**-producing **Helicobacter** (I) in the upper stomach comprises: (i) obtaining at least 2 separate gps. of dense carriers; (ii) combining the first gp. with a first reagent **indicator** (R1); (iii) combining the second gp. with a combination of a second reagent **indicator** (R2) and **urea**; (iv) encapsulating R1 and the R2-**urea** combination in a soluble capsule; (v) administering the capsule to a patient; (vi) causing the capsule to migrate to the gastric mucosa through the density of the carriers; (vii) dissolving the capsule contg. R1 and R2-**urea** in the gastric juices, such that R1 and R2-**urea** are placed in direct contact with the gastric mucosa, allowing the **urea** to react with any **urease** present in the stomach, thus creating **ammonia**, the **ammonia** causing the pH within the stomach to increase, this causing R1 and R2 to react to the increase in pH, the reaction being viewed through endoscopy. A diagnostic device is also provided.

USE - The method is useful for in vivo diagnosis of upper gastrointestinal diseases, esp those mediated by infection of gastric mucosa by **Helicobacter pylori**.

ADVANTAGE - The novel method of detecting alkaline pH change in vivo cuts down the number of biopsies required and is safe for patients having any bleeding tendencies. It is also a rapid, low cost test. Additionally, through the colour change, it can be determined if the change is a true positive or a false positive reaction.

Dwg.0/1
FS CPI EPI
FA AB; GI; DCN
MC CPI: B04-F10; B04-L05; B10-A13C; B11-C07B1; B12-K04A; D05-H04
EPI: S03-E04E; S03-E14H9

L116 ANSWER 8 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 1993-320766 [40] WPIX
CR 1995-206245 [27]
DNN N1993-247028 DNC C1993-142812
TI Detection of **urease** in human biological tissue - by contact with buffered **urea** and using formed **ammonia** to change colour of **indicator**, used esp. for diagnosing **Helicobacter pylori** infection.
DC B04 D16 S03
IN BOGUSLASKI, R C; CARRICO, R J
PA (SERI-N) SERIM RES CORP
CYC 20
PI WO 9319200 A1 19930930 (199340)* 26p C12Q001-58 <--
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: AU CA JP
AU 9337361 A 19931021 (199407) C12Q001-58 <--
US 5314804 A 19940524 (199420) 7p C12Q001-58 <--
EP 633946 A1 19950118 (199507) EN
R: DE DK FR GB IT SE
JP 07505279 W 19950615 (199532) C12Q001-58 <--
EP 633946 A4 19960626 (199644) C12Q001-58 <--
JP 2638682 B2 19970806 (199736) 8p C12Q001-58 <--
CA 2131317 C 19980224 (199817) C12Q001-58 <--
EP 633946 B1 20010801 (200144) EN C12Q001-58 <--
R: DE DK FR GB IT SE
DE 69330515 E 20010906 (200159) C12Q001-58 <--

ADT WO 9319200 A1 WO 1993-US1819 19930303; AU 9337361 A AU 1993-37361 19930303; US 5314804 A US 1992-856992 19920324; EP 633946 A1 EP 1993-906267 19930303, WO 1993-US1819 19930303; JP 07505279 W JP 1993-516569 19930303, WO 1993-US1819 19930303; EP 633946 A4 EP 1993-906267 ; JP 2638682 B2 JP 1993-516569 19930303, WO 1993-US1819 19930303; CA 2131317 C CA 1993-2131317 19930303; EP 633946 B1 EP 1993-906267 19930303, WO 1993-US1819 19930303; DE 69330515 E DE 1993-630515 19930303, EP 1993-906267 19930303, WO 1993-US1819 19930303

FDT AU 9337361 A Based on WO 9319200; EP 633946 A1 Based on WO 9319200; JP 07505279 W Based on WO 9319200; JP 2638682 B2 Previous Publ. JP 07505279, Based on WO 9319200; EP 633946 B1 Based on WO 9319200; DE 69330515 E Based on EP 633946, Based on WO 9319200

PRAI US 1992-856992 19920324

REP EP 458231; US 3876502; US 4748113; US 4830010; US 4923801; 2.Jnl.Ref

IC ICM **C12Q001-58**
ICS C12M001-40; C12Q001-26; C12Q001-62; G01N021-77

ICA C12Q001-00; C12Q001-04

ICI C12Q001-04, C12R001:

AB WO 9319200 A UPAB: 20011012

Urease (I) is detected in a biological tissue sample by (i) placing the sample on a diffusion element permeable to **NH3**; (2) treating the sample with a pH-optimised soln. of **urea** substrate (II) so as to produce **NH3**; (3) allowing **NH3** to diffuse through the diffusion element so that it contacts an **indicator** element on the other side; and (4) observing reaction of **NH3** with the **indicator**.

Also new are multilayer test devices and kits for this process.

Preg. (II) is present in a substrate element, comprising a matrix and pH 7-9 buffer. The indica element comprises a matrix contg. a pH-sensitive dye of pKa less than 8 (esp. 2-6).

The sample is palced on the diffusion element, then the subst6rate placed on top, partic. by folding over the support to which both elements are attached. The **indicator** or diffusion element may contain a known amt. of cpd. (esp. sulphamic acid) which reacts with any **NH3** already present (to ensure that only (I) - generated **NH3** is detected.) II Partic. the substrate element comprises absorbent paper impregnated with a buffered **urea** soln. then dried, and the diffusion element is a membrane of pore size 0.05-10 (esp. 0.1-10) microns, e.g. of PTFE. IITo provide a positive control, a known amt. of **urease** is placed on the diffusion element, away from the test sample. USE/ADVANTAGE - The method is used to detect **helicobacter pyloric** (a possible cause of gastritis and ulcers) in human gastric mucosal biopsies. In theis test components of the sample do not interfere with the **indicator** reaction, and the sample is incubated at pH optimal for (I) activity.

Dwg. 1/4

Dwg. 1/4

FS CPI EPI

FA AB; GI; DCN

MC CPI: B04-B02C3; B10-A13D; B11-C08E3; B12-K04A; D05-A02C; D05-H09
EPI: S03-E04E; S03-E14H6

ABEQ US 5314804 A UPAB: 19940705

Detecting **urease** in a biological tissue specimen comprises (A) positioning the specimen on 1 side of a diffusion element permeable to **ammonia**; (B) contacting the specimen with a pH optimised **urease** substrate comprising a soln. of **urea** and a buffer having a pH of 7.0-9.0; (c) permeating the obtd. **ammonia** through the diffusion element to contact an **indicator** element at the opposite side of and contiguous with the diffusion element; and (D) observing the reaction of **ammonia** with the **indicator** element. The **indicator** element comprises a matrix contg. a pH **indicator** having a pKa of 2.0-6.0.

Pref. the diffusion element is a membrane having a pore size of

0.05-10 microns. The soln. of **urea** and buffer is contained in a matrix to form the **urease** substrate.
USE/ADVANTAGE - Used for determining the presence of Helicopter **pylori**. The method is rapid and easy.
Dwg.1/4

L116 ANSWER 9 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **1991-232336** [32] WPIX
DNN **N1991-177148** DNC **C1991-101006**
TI Measurement of **urea** or **urease** in biological fluids - by mixing with pH **indicator** and **urease** or **urea**
.
DC B04 D16 J04 S03 S05
IN ORSONNEAU, J L
PA (HOSP-N) CENT HOSPIT REG UNI
CYC 1
PI FR 2654436 A 19910517 (199132)*
ADT FR 2654436 A FR 1989-14907 19891114
PRAI FR 1989-14907 19891114
IC **C12Q001-58**; G01N021-79; G01N033-62
AB FR 2654436 A UPAB: 19930928
Urea or **urease** is measured in liqs., partic. biological fluids, by the following methods: the fluid is mixed with a first reagent contg. a stable dye the colour of which varies with pH in the range 5.5-9, it is then mixed with a second reagent contg. **urea** or **urease** which ever one is not present in the test soln.. The optical density of the mixt. is then measured at the same wavelength of visible light before and after hydrolysis due to the action of the **urease**. The difference is compared with the result obtained with standard solns. and so the concn. of **urea** or **urease** is calculated.
ADVANTAGE - This process is cheap and simple to carry out, may be effected on urine samples without interference from **ammonia** present, and it does not require pre-treatment of the sample soln..
0/0
FS CPI EPI
FA AB; DCN
MC CPI: B04-B02C3; B04-B04B; B06-A02; B10-A13C; B11-C07B2; B12-K04A; D05-A02C; D05-H09; J04-B01
EPI: S03-E04E; S03-E14H; S05-C09

L116 ANSWER 10 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **1990-376291** [51] WPIX
DNC **C1990-163955**
TI Detection of **urease** in endoscopic biopsies - by colour change of **urea** soln. contg. **phenol red indicator**
.
DC B04 D16 J04
IN ISERHARD, R
PA (ISER-I) ISERHARD R
CYC 1
PI BR 8902699 A 19901120 (199051)*
ADT BR 8902699 A BR 1989-2699 19890519
PRAI BR 1989-2699 19890519
IC **C12Q001-58**
AB BR 8902699 A UPAB: 19930928
The enzyme **urease** performed in endoscopic biopsies of gastro-duodenal mucous membrane by bacterial action, is detected by immersing the biopsy specimen in a gelatinous soln. contg. peptone 1.0 g/l., glucose 1.0, sodium chloride 5, monobasic K phosphate 2, **Phenol Red** 0.012, **urea** 20, Metronidazol 0.002, Gentamicine 0.24 and agar-agar 12 g/l., in dist. water, in presence of **urease**, **ammonia** and bicarbonate are liberated, raising

the pH from 5.8 to over 6.0 and changing the colour of the gel from pale yellow to red. The anti-bacterial agents prevents contamination by bacteria from biopsy equipment.
FS CPI
FA AB
MC CPI: B02-G; B04-B02C3; B06-C; B07-D09; B10-A13C; B11-C07B1; B12-K04A; D05-H09; J04-B01

L116 ANSWER 11 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 1990-178354 [23] WPIX
DNC C1990-077456
TI Enrichment and isolation of **campylobacter pylori** - using acidic medium to kill non-**urease** producing bacteria and plating on agar contg. selective antibiotics.
DC B04 D16 J04
IN GUERRANT, R L; **MARSHALL, B J**
PA (UYVI-N) UNIV VIRGINIA
CYC 1
PI US 4923801 A 19900508 (199023)*
ADT US 4923801 A US 1987-37938 19870413
PRAI US 1987-37938 19870413
IC **C12Q001-58**
AB US 4923801 A UPAB: 19930928
Enrichment and isolation of **campylobacter** pylon form a specimen contaminated with a plurality of non-**urease** and **urease** producing organisms comprises: (a) homogenizing a specimen contaminated with organisms in water; (b) introducing the homogenate into an acidified (ph<2.5) soln. of **urea**, so that most of the non-**urease** producing and some of the **urease**-producing organisms are killed by the acid medium, those remaining being pretreated from acid attack by creating a protective **ammonium** layer by breaking down the **urea**; (c) plating the remaining **urease**-producing organisms onto a medium contg. antibiotics inhibitory to most of these organisms but not to C. pylon; and (d) detecting the presence of colonies of C.pylon.
USE/ADVANTAGE - C.pylon is a slow growing fastidious organisms and could not previously be easily isolated from biological specimens contg. contaminating bacteria. The new method of isolation utilizes the discovery that C pylon is able to survive in acid medium provided that **urea** is present, by prodn. of **urease** which breaks down the **urea** to **ammonia** which neutralises the acid and protects th organism. It is therefore possible to isolate C. pylon from leading contaminated specimens such as stool. Early detection and isolation of C. pylon would enable specific etiological diagnosis of this infection, and rapid determination of antibiotic sensitivities. @ 0/0
FS CPI
FA AB; DCN
MC CPI: B04-B02B1; B11-C08E3; B12-K04A4; D05-A02C; D05-H06; J04-B01

L116 ANSWER 12 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN 1986-327235 [50] WPIX
DNN N1986-244169 DNC C1986-141647
TI Compsn. for diagnosis of gastrointestinal disorders - e.g. mediated by Campylobacter pyloridis infection, comprises **urea**, bactericide, pH indicator and water.
DC B04 D16 S03
IN **MARSHALL, B J**
PA (MARS-I) MARSHALL B J
CYC 20
PI EP 204438 A 19861210 (198650)* EN 25p
R: AT BE CH DE FR GB IT LI LU NL SE
AU 8657398 A 19861120 (198702)

NO 8601966 A 19861215 (198705)
DK 8602283 A 19861118 (198707)
BR 8602243 A 19870113 (198708)
JP 62026000 A 19870203 (198710)
ZA 8603605 A 19871116 (198808)
US 4748113 A 19880531 (198824)
CA 1274757 A 19901002 (199045)
EP 204438 B 19910306 (199110)
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3677820 G 19910411 (199116)
JP 06095960 B2 19941130 (199501) 6p C12Q001-58 <--
KR 9406322 B1 19940716 (199617)# A61K031-17
DK 173710 B 20010709 (200147) C12Q001-58 <--

ADT EP 204438 A EP 1986-303493 19860508; JP 62026000 A JP 1986-112427 19860516; ZA 8603605 A ZA 1986-3605 19860515; US 4748113 A US 1985-744840 19850613; JP 06095960 B2 JP 1986-112427 19860516; KR 9406322 B1 KR 1986-7444 19860905; DK 173710 B DK 1986-2283 19860516

FDT JP 06095960 B2 Based on JP 62026000; DK 173710 B Previous Publ. DK 8602283

PRAI US 1985-744840 19850613; KR 1986-7444 19860905

REP 2.Jnl.Ref; A3...8721; EP 18825; FR 2442268; GB 1112251; JP 58077663; No-SR.Pub; US 3145086; US 4101382; US 4282316; JP 58077172

IC C12M001-34; **C12Q001-58**; G01N033-00
ICM A61K031-17; **C12Q001-58**
ICS A61B005-00; C12M001-34; G01N033-00

ICA G01N033-62

AB EP 204438 A UPAB: 19930922
Compsn. for detection of preformed **urease** comprises **urea**, a bactericide, sufficient pH indicator undergoing a colour change on increase of pH, and water.The compsn. has acid pH of at least 5.0 and pH is at least 1 pH unit lower than the pKa of the indicator.

Device for use as above comprises a container of vol. 40-1000 cu.mm. with an aperture area of 20-200 sq.mm, with a movable cover to open and close the opening, and contg. 0.04-2.0 pref. 0.2-0.4 ml of the above compsn..

USE/ADVANTAGE - Useful in diagnosis of gastrointestinal diseases mediated by e.g. Campylobacter pyloridis, which produces a high activity **urease**. Compsn. gives rapid, inexpensive and accurate diagnosis, of e.g. chronic or atrophic gastritis, gastroenteritis, dyspepsia, oesophageal reflux disease, gastric and duodenal ulcers, etc.. The bactericide ensures that only preformed **urease** is analysed.
3/3

FS CPI EPI

FA AB

MC CPI: B04-B02C3; B06-C; B10-A13C; B11-C07B1; B12-K04A; B12-K04D; D05-A02C; D05-H09
EPI: S03-E14H9

ABEQ EP 204438 B UPAB: 19930922
A composition for the diagnosis of gastrointestinal disorder in a human or lower animal subject by detection of **urease** in gastric material of the subject characterised in that it comprises (a) **urea**; (b) a bactericide which substantially inhibits growth of **urease** producing organisms; (c) a pH indicator which undergoes a colour change upon an increase of pH, at an effective concentration; and (d) water; wherein said composition has an acid pH of at.least 5.0 and the pH of said composition is at least about one pH unit lower than the pKa of said indicator.

ABEQ US 4748113 A UPAB: 19930922
Compsn. for diagnosis of gastrointestinal disorders, by detecting **urease** in gastric material of the patient, comprises (a) 10-40 g/l **urea**, (b) 1-5 g/l bactericide to inhibit growth of **urease** -producing organisms, (c) indicator having pKa 6.5-8.5, and (d) water. The compsn. has pH 5.0-6.5 and the pH is at least 1 unit below the pKa of the indicator.

The indicator is e.g. phenol red. The compsn. opt. includes a buffer and a gelling agent, e.g. non-nutritive agar.

ADVANTAGE - Compsn. allows rapid, inexpensive and accurate diagnosis of disorders of the upper gastrointestinal tract.

L116 ANSWER 13 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **1985-096374** [16] WPIX
DNN **N1985-072119** DNC **C1985-041887**
TI United multilayer analytical element - comprising **ammonia indicator** layer, air barrier layer and reagent layer forming gaseous **ammonia** on transparent carrier.
DC B04 J04
PA (FUJF) FUJI PHOTO FILM CO LTD
CYC 1
PI JP 60044865 A 19850311 (198516)* 8p
ADT JP 60044865 A JP 1983-153822 19830823
PRAI JP 1983-153822 19830823
IC G01N031-22; G01N033-50
AB JP 60044865 A UPAB: 19930925
Multilayer analytical element comprises (a) **ammonia indicator** layer, (b) air barrier layer, (c) reagent layer contg. a reagent capable of reacting with **ammonia**-forming substance to form a gaseous **ammonia** in this order on a water-impermeable transparent carrier. The air barrier layer is consisted of a continuous pore-contg. porous substance which is formed by twining or bonding mutually fibrous substance. It can permeate gaseous **ammonia** and can intercept liq. water and liq. water contg. interfering substances.

The porous substance is e.g. paper, felt or non-woven cloth, 50-500 microns thick and 20-90% in porosity. The combination of **ammonia** -forming substance and reagent is e.g. **urea/urease,** creatin creatinine/creatinine deiminase, amino acid/amino acid dehydrogenase, etc. The water-impermeable transparent carrier is e.g. PET, polycarbonate of bisphenol-A etc. The **ammonia indicator** used for the **ammonia indicator** ayer is e.g. leucocyanine dye, nitro-substd. leuco dye, etc.

USE/ADVANTAGE - Element is useful for the analysis of **ammonia** -forming substances, **ammonia**-forming substrates, or **ammonia** in liq. samples, e.g. useful for analysis of **urea** -form nitrogen in body fluids such as blood, urine, spinal fluid, etc. As the analytical element has air barrier layer, the diffusion velocity of **ammonia** gas is high, consequently the determination time can be greatly reduced and accuracy increased. Also as commercial paper, felt, etc. if necessary subjected to water repellent treatment, can be used as the air barrier layer, and an expensive analytical element can be effectively mass-produced.

0/0
FS CPI
FA AB
MC CPI: B04-B02C; B04-B04B; B04-B04D; B04-B04H; B04-C03; B05-C01; B10-A13C; B10-A17; B10-B02A; B10-B02B; B12-K04; J04-B01

L116 ANSWER 14 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **1983-59481K** [25] WPIX
DNN **N1983-107229** DNC **C1983-057712**
TI **Urea** analysis by enzyme hydrolysis of **urea** in sample - converting resulting **ammonium** carbonate into **ammonia** and measuring amt. of **ammonia** by **indicator** discolouration.
DC B04 D16
PA (KYOT-N) KYOTO DAIICHI KAGAKU KK
CYC 1
PI JP 58077663 A 19830511 (198325)* 8p
PRAI JP 1981-177660 19811102

IC **C12Q001-58**; G01N033-62
AB JP 58077663 A UPAB: 19930925
Method comprises (a) hydrolysing **urea** in a sample by an enzyme system exhibiting **urease** activity in a sample hole which can be kept air-tight, (b) converting resulting **ammonium** carbonate into **ammonia** gas under alkaline condition, (c) leading the gas via a gas-permeable membrane into an **indicator** layer, and (d) determining the concn. of **urea** based on discoloration of the **indicator** corresp. to change in pH by **ammonia** gas.
Urea in biological fluids such as blood, blood serum, blood plasma, saliva, etc. can be rapidly, accurately and precisely determined regardless of kind of sample liq.
FS CPI
FA AB
MC CPI: B04-B04B; B04-B04D; B04-B04G; B10-A13C; B11-C07B; B12-K04; D05-A02

L116 ANSWER 15 OF 15 WPIX (C) 2002 THOMSON DERWENT
AN **1979-33005B** [17] WPIX
TI Identification of gram-negative enterobacteria etc. - by changes in two-component **indicator** system showing fermentation of carbohydrate(s), reduction of methylene blue and **urease** activity.
DC B04 D16
IN KALINA, G P
PA (MOHY-R) MOSC HYGIENE INST
CYC 1
PI SU 610863 A 19780520 (197917)*
PRAI SU 1977-2438185 19770105
IC C12K001-04
AB SU 610863 A UPAB: 19930901
Gram-negative bacteria can be identified by sowing the bacteria onto a differentiating medium, and then evaluating the enzymatic action of the bacterial. This rather cumbersome method can be simplified by sowing the bacteria in two layers of a composite nutritive preparation. The first layer contains (in g.) K2HPO4 0.05-0.15, KH2PO4 0.02-0.06, Na2S2O3 0.01-0.03, glucose 0.03-1.0, **urea** 0.2-0.6, methylene blue 0.04-0.08, **phenol red** 0.006-0.01, agar 0.55-0.65; and the balance (to 100 ml) is nutritive broth. The second layer contains (in g.) K2HPO4 0.05-0.15, KH2PO4 0.02-0.06 iron-**ammonium** citrate 0.01-0.03, lactose 0.8-1.2, saccharose 0.8-1.2, **phenol red** 0.004-0.01, crystalline violet 0.001-0.003, agar 1.8-2.2; and the balance (to 100 ml) is a nutritive broth. The second layer is placed on the first layer and bevelled. Main groups of enterobacteria and kindred microorganism can be differentiated.
FS CPI
FA AB
MC CPI: B04-B02B; B04-B02C; B05-C05; B06-C; B06-F04; B10-A06; B11-C07B; B12-K04; D05-H04

=> d his

(FILE 'HOME' ENTERED AT 14:18:49 ON 06 DEC 2002)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 14:19:07 ON 06 DEC 2002
E UREASE/CN
L2 507 S UREASE NOT L***
E UREA/CN
L3 1 S E3
E AMMONIA/CN
L4 1 S E3
E PHENOL RED/CN

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L5            2 S E3,E7,E8
L6           23 S 143-74-8/CRN
L7            6 S L6 AND (K OR NA)/ELS
L8            1 S L6 AND H3N
L9            4 S L7 AND 2/NC
L10           6 S L5,L8,L9

     FILE 'HCAPLUS' ENTERED AT 14:21:31 ON 06 DEC 2002
L11        6311 S L***
L12         136 S L2
L13       10002 S UREASE
L14        5979 S L11,L12 AND L13
L15        6375 S L11,L12,L14
L16        4023 S L13 NOT L15
L17       57012 S L3
L18      179374 S UREA
L19        2290 S CARBAMIDE
L20      183476 S L17-L19
L21        2808 S L15 AND L20
L22        1997 S L16 AND L20
L23        4805 S L21,L22
L24      105034 S L4
L25      154412 S AMMONIA
L26         919 S L23 AND L24,L25
L27        1067 S L23 AND NH3
L28        1570 S L26,L27
L29        1137 S L10
L30        2826 S PHENOL RED
L31         234 S PHENOLSULFONPHTHALEIN OR PHENOLSULPHONPHTHALEIN
L32          14 S L28 AND L29-L31

     FILE 'REGISTRY' ENTERED AT 14:26:23 ON 06 DEC 2002
L33           1 S 14798-03-9

     FILE 'HCAPLUS' ENTERED AT 14:26:28 ON 06 DEC 2002
L34       41560 S L33
L35         203 S L23 AND L34
L36         523 S L23 AND NH4
L37        1945 S L35,L36,L28
L38          15 S L37 AND L29-L31
L39          15 S L32,L38
                SEL DN AN 1 5
L40           2 S L39 AND E1-E6
                E MARSHALL B/AU
L41          80 S E3,E12,E25-E27
                E MENDIS A/AU
L42          22 S E3,E4,E6,E7
                E CHAIRMAN S/AU
L43           2 S E1
                E KIMBERLEY/PA,CS
L44        1585 S (KIMBER?(L)CLARK?)/PA,CS
L45        1689 S L41-L44
L46           7 S L45 AND L15,L16
                SEL DN AN 2 6
L47           5 S L46 NOT E1-E6
L48           5 S L47,L40
L49           5 S L48 AND L23
L50           3 S L49 AND L29,L30,L31
L51           4 S L49 AND (L24,L25,L34 OR NH3 OR NH4)
L52           5 S L49-L51
L53           3 S L52 AND AMMON?
L54           5 S L52,L53
L55        4805 S L11-L16 AND L17-L20
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L56        1945 S L55 AND (L24 OR L25 OR L34 OR NH4 OR NH3)
                E INDICATOR/CT
L57           2 S L56 AND E10-E16
                E E8+ALL
L58           8 S L56 AND E2+NT
L59          96 S L56 AND INDICATOR
L60          96 S L57,L58,L59
L61          15 S L56 AND L29-L31
L62           2 S L56 AND (?PHENOLSULFONPHTHALEIN? OR ?PHENOLSULPHONPHTHALEIN?)
L63         101 S L60-L62
                E PH/CT
                E E3+ALL
L64           3 S L63 AND E8,E9,E7+NT
L65           2 S L63 AND E13+NT
L66          46 S L63 AND PH
L67           8 S L63 AND PYLORI
L68           3 S L63 AND CAMPYLOBACT?
                E CAMPYLOBACTER/CT
L69        3324 S E3-E47
                E E3+ALL
L70        2217 S E4+NT
L71           3 S L63 AND L69,L70
L72           7 S L63 AND HELICOBACT?
                E HELICOBACT?/CT
L73        5114 S E4-E35
                E E4+ALL
L74        6277 S E4+NT
L75           8 S L63 AND L73,L74
L76           8 S L67,L68,L71,L72,L75
L77           7 S L76 AND L64-L66
L78          10 S L54,L75-L77
                E DIGESTIVE TRACT/CT
L79       11677 S E4-E40
                E E4+ALL
                E E3+ALL
L80      554522 S E3+NT
L81         126 S L56 AND L79,L80
L82           7 S L81 AND L63
L83          11 S L78,L82
L84          11 S L83 AND L11-L32,L34-L83
L85           6 S L84 AND (H OR C)()PYLOR?
L86          10 S L84 AND (HELICO? OR CAMPYLO?)()PYLOR?
L87          11 S L84 AND (PH OR ?UREA OR UREASE OR INDICATOR OR PH OR GASTR? O
L88          11 S L83-L87
L89          10 S L88 AND (HELICOBACT? OR CAMPYLOBACT?)
L90          11 S L88,L89
                SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 14:56:11 ON 06 DEC 2002
L91           5 S E1-E5

     FILE 'REGISTRY' ENTERED AT 14:56:27 ON 06 DEC 2002

     FILE 'HCAPLUS' ENTERED AT 14:56:46 ON 06 DEC 2002

     FILE 'WPIX' ENTERED AT 15:00:00 ON 06 DEC 2002
                E C12Q001-58/IC,ICM,ICS
L92         210 S E3-E5
                E UREA/DCN
                E E3+ALL
L93       46725 S E2 OR 0123/DRN OR UREA
L94       47887 S CARBAMIDE OR L93
L95        1147 S UREASE OR L92
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L96          579 S L95 AND L93,L94
L97           70 S L96 AND INDICATOR
L98           16 S L96 AND (PHENOL RED OR PHENOLRED OR ?PHENOLSULFONPHTHALEIN? O
                 E PHENOL RED/DCN
                 E E3+ALL
L99           13 S L96 AND E2
L100          96 S L96 AND (B11-C07? OR C11-C07?)/MC
L101          86 S (B12-K04A OR C12-K04A)/MC AND L96
                 E MARSHALL B/AU
L102          37 S E3,E11
                 E MENDIS A/AU
                 E CHAIRMAN S/AU
L103           6 S L102 AND L96
L104         212 S L96 AND G01N/IC,ICM,ICS
L105         126 S L96 AND S03-E?/MC
L106          61 S L97-L99 AND L100,L101,L104,L105
L107          25 S L106 AND (AMMON? OR NH4 OR NH3)
                 E AMMONIA/DCN
                 E E3+ALL
L108       16779 S E2 OR 1713/DRN
L109         297 S L96 AND (L108 OR AMMON? OR NH4 OR NH3)
L110          36 S L109 AND L97,L98,L99
L111           7 S L110 AND (HELICOBACT? OR CAMPYLOBACT? OR PYLORI?)
L112           5 S L110 AND (HELICOBACT? OR CAMPYLOBACT? OR H OR C)()PYLORI?
L113           7 S L111,L112
L114          29 S L110 NOT L113
                 SEL DN AN 1 4 6 10 13 20
L115           6 S L114 AND E1-E15
L116          15 S L113,L115,L103
                 E KIMBERLEY/PA
L117           8 S E5-E8,E15
L118           1 S E22
L119        3451 S E34-E44,E48
L120        2039 S E49-E57
                 E KIMB/PACO
L121        4546 S E3-E5
L122           0 S L117-L121 AND L96

     FILE 'WPIX' ENTERED AT 15:28:11 ON 06 DEC 2002

=> fil medline
FILE 'MEDLINE' ENTERED AT 15:47:08 ON 06 DEC 2002

 FILE LAST UPDATED: 23 NOV 2002 (20021123/UP).  FILE COVERS 1958 TO DATE.

 On June 9, 2002, MEDLINE was reloaded.  See HELP RLOAD for details.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2002 vocabulary.  Enter HELP THESAURUS for details.

 If you received SDI results from MEDLINE on October 8, 2002, these may
 have included old POPLINE data and in some cases duplicate abstracts.
 For further information on this situation, please visit NLM at:
 http://www.nlm.nih.gov/pubs/techbull/so02/so02_popline.html

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 MEDLINE file and process the SDI run dated October 8, 2002 again.

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 October 8, 2002 will not be charged for this SDI run.  If you received
 your update online and displayed answers, you may request a credit by
 contacting the CAS Help Desk at 1-800-848-6533 in North America or
 614-447-3698 worldwide, or via email to help@cas.org
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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all tot

L156 ANSWER 1 OF 16 MEDLINE
AN 2002200062 MEDLINE
DN 21930538 PubMed ID: 11932761
TI Evaluation of a locally-made **urease** test for detecting **Helicobacter pylori** infection.
AU Adesanya A A; Oluwatowoju I O; Oyedeji K S; da Rocha-Afodu J T; Coker A O; Afonja O A
CS Department of Surgery, College of Medicine, University of Lagos, Idi-Araba, P.M.B. 12003, Lagos, Nigeria.. cmul@rcl.nig.com
SO Niger Postgrad Med J, (2002 Mar) 9 (1) 43-7.
Journal code: 9613595. ISSN: 1117-1936.
CY Nigeria
DT (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200205
ED Entered STN: 20020405
Last Updated on STN: 20020515
Entered Medline: 20020514
AB We studied the efficacy of a home-made **urease** test (HUT) in the detection of **Helicobacter pylori** (HP) infection in patients undergoing upper gastrointestinal endoscopy. In the first phase of the study, two antral biopsies each were obtained from 43 patients for **urease** tests using the CLOtest and a home-made buffered 2% **urea** solution with **phenol red** as indicator at pH 6.8 (2% HUT). Twenty-six patients (60.5%) were HP positive, both by the 2% HUT and CLOtest with 100% concordance. In the second phase of the study three antral biopsies each and blood were obtained from 42 patients for the determination of HP status using a 10% HUT and a combination of culture and serology. Twenty-three patients (54.8%) were HP positive using the 10% HUT, while 32 patients (76.2%) were positive using the combination of 2 tests. Compared to this the sensitivity and specificity of the 10% HUT were 72% and 100% respectively. The CLOtest produced a colour change in a shorter time than the 2% and 10% HUT (median 1 hour versus 10 hours versus 16 hours $p < 0.0001$). In the third phase of the study, we observed that by doubling the biopsy size, the time required to obtain a colour change was significantly reduced (median 4.5 hours versus 10 hours $p < 0.05$). The HUT is easy to prepare, cheap, sufficiently sensitive and it is reliable enough to start treatment when positive. With 100% concordance and 1% the cost per test when compared to the commercially available CLOtest; the 10% HUT is hereby recommended for the detection of UP infection in our region.
CT Check Tags: Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't
Adult
Aged
Aged, 80 and over
Biopsy
Dyspepsia: MI, microbiology
Dyspepsia: PA, pathology
Gastric Mucosa: ME, metabolism
Gastric Mucosa: MI, microbiology
Gastric Mucosa: PA, pathology
Gastroscopy
***Helicobacter Infections: DI, diagnosis**
Helicobacter Infections: PA, pathology

***Helicobacter pylori: IP, isolation & purification**
Helicobacter pylori: ME, metabolism
Indicators and Reagents
Middle Age
Predictive Value of Tests
Pyloric Antrum: ME, metabolism
***Pyloric Antrum: MI, microbiology**
***Pyloric Antrum: PA, pathology**
Reagent Kits, Diagnostic
Sensitivity and Specificity
Urease: AN, analysis
***Urease: DU, diagnostic use**
CN 0 (Indicators and Reagents); 0 (Reagent Kits, Diagnostic); EC 3.5.1.5 (**Urease**)

L156 ANSWER 2 OF 16 MEDLINE
AN **2000437493** MEDLINE
DN **20389674** PubMed ID: **10930437**
TI Local **pH** elevation mediated by the intrabacterial **urease** of **Helicobacter pylori** cocultured with gastric cells.
AU Athmann C; Zeng N; Kang T; Marcus E A; Scott D R; Rektorschek M; Buhmann A; Melchers K; Sachs G
CS University of California at Los Angeles and Veterans Administration, Greater Los Angeles Healthcare System, Los Angeles, California, USA.
NC DK-41301 (NIDDK)
DK-46917 (NIDDK)
DK-53462 (NIDDK)
+
SO JOURNAL OF CLINICAL INVESTIGATION, (2000 Aug) 106 (3) 339-47.
Journal code: 7802877. ISSN: 0021-9738.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200009
ED Entered STN: 20000928
Last Updated on STN: 20000928
Entered Medline: 20000918
AB **Helicobacter pylori** resists gastric acidity by modulating the proton-gated **urea** channel UreI, allowing for **pH**(out)-dependent regulation of **urea** access to intrabacterial **urease**. We employed **pH**- and Ca(2+)-sensitive fluorescent dyes and confocal microscopy to determine the location, rate, and magnitude of **pH** changes in an **H. pylori**-AGS cell coculture model, comparing wild-type bacteria with nonpolar ureI-deletion strains (ureI-ve). Addition of **urea** at **pH** 5.5 to the coculture resulted first in elevation of bacterial periplasmic **pH**, followed by an increase of medium **pH** and then **pH** in AGS cells. No change in periplasmic **pH** occurred in ureI-deletion mutants, which also induced a slower increase in the **pH** of the medium. Pretreatment of the mutant bacteria with the detergent C(12)E(8) before adding **urea** resulted in rapid elevation of bacterial cytoplasmic **pH** and medium **pH**. UreI-dependent NH(3) generation by intrabacterial **urease** buffers the bacterial periplasm, enabling acid resistance at the low **urea** concentrations found in gastric juice. Perfusion of AGS cells with **urea**-containing medium from coculture at **pH** 5.5 did not elevate **pH**(in) or [Ca(2+)](in), unless the conditioned medium was first neutralized to elevate the NH(3)/NH(4)(+) ratio. Therefore, cellular effects of intrabacterial **ammonia** generation under acidic conditions are indirect and not through a type IV secretory complex. The **pH**(in) and [Ca(2+)](in) elevation that causes the NH(3)/NH(4)(+) ratio to increase after neutralization of infected gastric

juice may contribute to the gastritis seen with **H. pylori** infection.
CT Check Tags: Human; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
Ammonia: ME, metabolism
Bacterial Proteins: GE, genetics
Bacterial Proteins: ME, metabolism
Coculture
***Gastric Mucosa: ME, metabolism**
***Gastric Mucosa: MI, microbiology**
Gene Deletion
Genes, Bacterial
***Helicobacter pylori: EN, enzymology**
Helicobacter pylori: GE, genetics
Helicobacter pylori: PY, pathogenicity
Hydrogen-Ion Concentration
Mutation
Tumor Cells, Cultured
Urease: GE, genetics
***Urease: ME, metabolism**
RN **7664-41-7 (Ammonia)**
CN 0 (Bacterial Proteins); 0 (UreI protein); EC 3.5.1.5 (**Urease**)

L156 ANSWER 3 OF 16 MEDLINE
AN 1999416544 MEDLINE
DN 99416544 PubMed ID: 10487076
TI A home made rapid **urease** test in the diagnosis of **Helicobacter pylori** infection.
AU Chiu W Y; Chick W K; Kwok K H
CS Department of Surgery, Queen Elizabeth Hospital, Kowloon, Hong Kong.
SO SINGAPORE MEDICAL JOURNAL, (1999 Apr) 40 (4) 243-5.
Journal code: 0404516. ISSN: 0037-5675.
CY Singapore
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199910
ED Entered STN: 19991101
Last Updated on STN: 19991101
Entered Medline: 19991021
AB AIM OF STUDY: To determine whether a homemade rapid **urease** test (RUT) (1 mL of 10% **urea** broth in distilled water plus one drop of 1% **phenol red** as indicator, cost/test USD0.19) was reliable when compared to histology in the diagnosis of HP infection. METHOD: Prospective consecutive sampling of patients who underwent outpatient oesophagogastroduodenoscopy and antral biopsies from October 1996 to January 1997. RUT and histology examinations were done on all specimens. Sensitivity, specificity, positive predictive value, negative predictive value and accuracy of the RUT were calculated accordingly. RESULTS: Amongst our 140 patients, the sensitivity, specificity, positive and negative predictive values and accuracy of RUT were 94%, 99%, 99%, 95% and 96% respectively. Seventy-seven percent of the positive RUTs can be detected within 1 hour. CONCLUSION: Our homemade RUT is an inexpensive test with good sensitivity and specificity for HP infection.
CT Check Tags: Comparative Study; Human
Biopsy: EC, economics
Cost-Benefit Analysis
Endoscopy, Digestive System: EC, economics
Gastric Mucosa: MI, microbiology
Gastric Mucosa: PA, pathology
***Gastritis: DI, diagnosis**
Gastritis: MI, microbiology
***Helicobacter Infections: DI, diagnosis**

Helicobacter Infections: MI, microbiology
***Helicobacter pylori: EN, enzymology**
Hydrogen-Ion Concentration
***Phenolsulfonphthalein: DU, diagnostic use**
Predictive Value of Tests
Prospective Studies
***Reagent Kits, Diagnostic: EC, economics**
***Urea: DU, diagnostic use**
***Urease: ME, metabolism**
RN **143-74-8 (Phenolsulfonphthalein); 57-13-6 (Urea)**
CN 0 (Reagent Kits, Diagnostic); EC 3.5.1.5 (**Urease**)

L156 ANSWER 4 OF 16 MEDLINE
AN 1999379746 MEDLINE
DN 99379746 PubMed ID: 10452677
TI **Helicobacter pylori**-negative gastric and duodenal ulcers.
AU Tsuji H; Kohli Y; Fukumitsu S; Morita K; Kaneko H; Ohkawara T; Minami M; Ueda K; Sawa Y; Matsuzaki H; Morinaga O; Ohkawara Y
CS Department of Internal Medicine, Aiseikai Yamashina Hospital, Kyoto, Japan.
SO JOURNAL OF GASTROENTEROLOGY, (1999 Aug) 34 (4) 455-60.
Journal code: 9430794. ISSN: 0944-1174.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199910
ED Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991026
AB It is unclear whether **Helicobacter pylori** infection is essential to the development of peptic ulcers. In this study, we examined the rates of H. **pylori**-negativity among patients with peptic ulcers. We also attempted to clarify the characteristics of H. **pylori**-negative peptic ulcers to throw light on the pathogenesis of peptic ulcers. The study included 215 consecutive patients with gastric ulcers (GUs) and 120 consecutive patients with duodenal ulcers (DUs). After routine endoscopic examination and **phenol red** dye endoscopy, forceps biopsies were performed for culture, histology, and the rapid **urease** test. A patient was considered H. **pylori**-negative when the serum anti-H. **pylori** IgG and the three tests on biopsied specimens were all negative. H. **pylori** -negative rates were 3.2% in the patients with GUs and 1.7% in the patients with DUs. Lack of atrophy of the gastric mucosa was significantly more common in the H. **pylori**-negative patients with GUs. A history of ulcer disease was less common and antral ulcers were more common in H. **pylori**-negative GU patients, but not significantly so. As the **urea** breath test had not been performed, the possibility of a false-negative result cannot be completely ruled out, but we believe that the H. **pylori**-negative rate in our study is more reliable than these rates in previous reports, because we visualized H. **pylori** distribution by **phenol red** dye endoscopy to avoid false-negative results in biopsies, and we used both biopsy and serum anti-H. **pylori** IgG findings to establish an H. **pylori**-negative diagnosis. Since H. **pylori**-negative peptic ulcers certainly exist, H. **pylori** infection is thought not to be essential to the development of peptic ulcers. There were few differences between the characteristics of H. **pylori**-negative and H. **pylori**-positive peptic ulcers in our study. A large-scale study is required to clarify the characteristics of H. **pylori** -negative peptic ulcers.
CT Check Tags: Female; Human; Male

Adult
Aged
Aged, 80 and over
Biopsy
Duodenal Ulcer: EP, epidemiology
*Duodenal Ulcer: MI, microbiology
Duodenal Ulcer: PA, pathology
Endoscopy, Gastrointestinal
Gastric Mucosa: MI, microbiology
Gastric Mucosa: PA, pathology
Helicobacter Infections: EP, epidemiology
***Helicobacter pylori: IP, isolation & purification**
Incidence
Middle Age
Stomach Ulcer: EP, epidemiology
*Stomach Ulcer: MI, microbiology
Stomach Ulcer: PA, pathology

L156 ANSWER 5 OF 16 MEDLINE
AN 1999364047 MEDLINE
DN 99364047 PubMed ID: 10435189
TI [Evaluation of a fast **urease** test for the detection of **Helicobacter pylori**].
Evaluacion de una prueba de ureasa rapida para la deteccion de **Helicobacter pylori**.
AU Blanco D; Carol A; Rivera P; Hernandez F; Hevia F; Guillen F; Duran S
CS Facultad de Microbiologia, Unidad de Microscopia Electronica, Universidad de Costa Rica, San Jose, Costa Rica.
SO ACTA GASTROENTEROLOGICA LATINOAMERICANA, (1999) 29 (1) 17-20.
Journal code: 0261505. ISSN: 0300-9033.
CY Argentina
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA Spanish
FS Priority Journals
EM 199909
ED Entered STN: 19990925
Last Updated on STN: 19990925
Entered Medline: 19990915
AB **Helicobacter Pylori** colonize the gastric mucosa and their adaptation to this environment is related with its high activity **urease**. This enzyme hydrolyzes the gastric **urea**, neutralizing the acid environment of the bacteria. Based on that reaction numerous presumptive diagnosis tests, have been developed using a solution of **urea** (usually 6%) with a pH indicator (usually 0.05% fenol-red); nevertheless, the color changes are so light that some persons do not detect it. For that reason, a modification of that reaction was proposed using a mix of pH indicators (0.05% fenolred and 0.002 bromothymol blue) which induces a color change from light green to deep purple. Also, the reaction of **urease** was evaluated using only bromothymol blue. The reaction using fenol red as indicator showed the higher values for sensitivity of 58.8% and the specificity of 66.6%; whereas using only bromothymol-blue those values were 46 y 71.4% respectively. The efficiency of the test using fenol-red or the mix of this bromothymol- was 64.2 y 62.2%, respectively; however, the mix of indicators induce a change color easily detected, because of changes from ligh-green to deep-purple.
CT Check Tags: Human
Bromthymol Blue
English Abstract
***Helicobacter Infections: DI, diagnosis**
***Helicobacter pylori**
Indicators and Reagents

Phenolsulfonphthalein
Sensitivity and Specificity
***Urease: ME, metabolism**
RN **143-74-8 (Phenolsulfonphthalein)**; 76-59-5 (Bromthymol Blue)
CN 0 (Indicators and Reagents); EC 3.5.1.5 (**Urease**)

L156 ANSWER 6 OF 16 MEDLINE
AN **1999002876** MEDLINE
DN **99002876** PubMed ID: **9784187**
TI Development of a chemiluminescent **urease** activity assay for **Helicobacter pylori** infection diagnosis in gastric mucosa biopsies.
AU Roda A; Piazza F; Pasini P; Baraldini M; Zambonin L; Fossi S; Bazzoli F; Roda E
CS Department of Pharmaceutical Sciences, University of Bologna, Bologna, Italy.
SO ANALYTICAL BIOCHEMISTRY, (1998 Nov 1) 264 (1) 47-52.
Journal code: 0370535. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199811
ED Entered STN: 19990115
Last Updated on STN: 19990115
Entered Medline: 19981130
AB A chemiluminescent **urease** activity assay has been developed and optimized using the chemiluminescent **pH** indicator phthalhydrazidylazoacetylacetone. This compound is stable at **pH** </= 7 and decomposes at higher **pH** values, emitting light in the presence of H2O2. **Urease** catalyzes hydrolysis of **urea** to form **NH3** and CO2 which increase the **pH** of the reaction medium, thus allowing the chemiluminescent indicator to decompose and produce photons. The emitted light is proportional to the **urease** activity when **urea** is in excess. **Urease** tests based on colorimetric **pH** indicators like **phenol red** are commercially available and commonly used for the rapid diagnosis of **Helicobacter pylori** infection in gastric mucosa biopsy specimens, since this bacterium produces high amounts of **urease**. Such colorimetric tests often lack sensitivity, giving false-negative results. The developed chemiluminescent test proved to be at least 50-fold more sensitive than the colorimetric tests, permitting early diagnosis of infection, and it is more rapid, giving results in 1-10 min compared to 30 min. Further applications of this assay could be the in situ localization of **urease** activity, corresponding to the presence of **H. pylori**, in gastric mucosa cryosections and the development of high-throughput screening assays of antimicrobial drugs able to inactivate the bacterium.

CT Check Tags: Comparative Study; Female; Human; Male
Adult
Aged
Biopsy
Chemiluminescence
Colorimetry
Evaluation Studies
***Gastric Mucosa**
***Helicobacter Infections: DI, diagnosis**
Helicobacter Infections: PA, pathology
***Helicobacter pylori**
*Hydrazines
Hydrazines: CH, chemistry
Hydrogen-Ion Concentration

***Indicators and Reagents**
Indicators and Reagents: CH, chemistry
Middle Age
Molecular Structure
*Phthalazines
Phthalazines: CH, chemistry
Sensitivity and Specificity
***Urease: ME, metabolism**
CN 0 (Hydrazines); 0 (Indicators and Reagents); 0 (Phthalazines); 0 (phthalhydrazidylazoacetylacetone); EC 3.5.1.5 (**Urease**)

L156 ANSWER 7 OF 16 MEDLINE
AN **97274167** MEDLINE
DN **97274167** PubMed ID: **9128315**
TI Gastric juice **urease** activity as a diagnostic test for **Helicobacter pylori** infection.
AU Mokuolu A O; Sigal S H; Lieber C S
CS Gastroenterology and Liver Programs, Bronx VA Medical Center, Mt. Sinai School of Medicine, New York 10468, USA.
NC AA03508 (NIAAA)
SO AMERICAN JOURNAL OF GASTROENTEROLOGY, (1997 Apr) 92 (4) 644-8. Journal code: 0421030. ISSN: 0002-9270.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199705
ED Entered STN: 19970602
Last Updated on STN: 19970602
Entered Medline: 19970516
AB OBJECTIVE: An ideal assay (inexpensive, sensitive, specific, and readily available) for **Helicobacter pylori** is lacking. **Urease** activity is an important characteristic of the organism and is employed in the rapid **urease** and **urea** breath tests. In this study, we assessed whether a simpler test, namely, measurement of gastric juice **urease** activity, would provide comparable results. METHODS: Gastric juice was analyzed for **urea** and **ammonia** in 57 patients evaluated with rapid **urease** test and histology. **Urease** activity was assessed by the fraction of **urea** hydrolyzed to **ammonia**. RESULTS: Thirty-five subjects were **H. pylori** positive and 22 were **H. pylori** negative. Compared with noninfected subjects, **H. pylori**-positive patients had lower **urea** levels (0.52 +/- 0.10 vs. 2.77 +/- 0.48 mM, $p < 0.01$), higher **ammonia** concentrations (6.59 +/- 1.06 vs. 1.64 +/- 0.25 mM, $p < 0.01$), and higher gastric **urease** activity (0.83 +/- 0.03 vs. 0.24 +/- 0.14, $p < 0.01$). In **H. pylori**-negative patients, there was a correlation between blood and gastric **urea** ($r = 0.61$, $p < 0.01$). However, in **H. pylori**-positive patients, no such relationship existed ($r = 0.30$, $p = 0.11$). The ratio of gastric to blood **urea** was lower in infected patients (0.11 +/- 0.02 vs. 0.45+/- 0.04, $p < 0.01$). The sensitivity and specificity of gastric **urease** activity for diagnosis of **H. pylori** were 91% and 100%, respectively, and for the ratio of gastric to blood **urea**, 89% and 95%, respectively. CONCLUSION: Gastric juice **urease** activity is a simple, sensitive, and specific means to detect **H. pylori**.
CT Check Tags: Comparative Study; Female; Human; Male; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
Ammonia: AN, analysis
***Duodenal Ulcer: DI, diagnosis**
Dyspepsia: DI, diagnosis
***Enzyme Tests**

*Gastric Juice: EN, enzymology
***Helicobacter Infections: DI, diagnosis**
***Helicobacter pylori**
***Stomach Ulcer: DI, diagnosis**
Urea: AN, analysis
***Urease: AN, analysis**
RN **57-13-6 (Urea); 7664-41-7 (Ammonia)**
CN EC 3.5.1.5 (**Urease**)

L156 ANSWER 8 OF 16 MEDLINE
AN 97044389 MEDLINE
DN 97044389 PubMed ID: 8889460
TI Comparison of three **urease** tests for detection of **Helicobacter pylori** in gastric biopsy specimens.
AU Boyanova L; Stancheva I; Todorov D; Kumanova R; Petrov S; Vladimirov B; Pehlivanov N; Mitova R; Chakarski I; Churchev I
CS Department of Microbiology, Medical University, Sofia, Bulgaria.
SO EUROPEAN JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY, (1996 Sep) 8 (9) 911-4.
Journal code: 9000874. ISSN: 0954-691X.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199701
ED Entered STN: 19970128
Last Updated on STN: 19970128
Entered Medline: 19970114
AB OBJECTIVE: To propose two modified **urease** tests for the detection of **Helicobacter pylori** in gastric biopsy specimens. PATIENTS AND METHODS: The presence of H. **pylori** infection was determined in 237 patients undergoing upper gastrointestinal endoscopy. Three media were used for the **urease** tests: Christensen's 2% **urea** broth and two **urea** agar media, modified by increasing the concentration of **urea** (to 4% and 10%) and **phenol red** and omitting the nutrients. RESULTS: The modified tests had good sensitivity (> 78%), specificity (96%) and accuracy (> or = 86%) at 2 h using small amounts (15%) of biopsy homogenates. They were statistically more sensitive and accurate than Christensen's broth. CONCLUSION: Both the modified 4% and 10% **urea** agar tests are simple, sensitive and specific and can be performed with small amounts of sample.
CT Check Tags: Comparative Study; Human
Bacteriological Techniques
Biopsy
*Gastrointestinal Diseases: MI, microbiology
Gastrointestinal Diseases: PA, pathology
***Helicobacter Infections: DI, diagnosis**
Helicobacter pylori: EN, enzymology
***Helicobacter pylori: IP, isolation & purification**
Histological Techniques
Predictive Value of Tests
Sensitivity and Specificity
***Urease: AN, analysis**
CN EC 3.5.1.5 (**Urease**)

L156 ANSWER 9 OF 16 MEDLINE
AN 96437596 MEDLINE
DN 96437596 PubMed ID: 8840243
TI Diagnosis of **Helicobacter pylori** infection.
AU Azuma T; Kato T; Hirai M; Ito S; Kohli Y
CS Second Department of Internal Medicine, Fukui Medical School, Japan.
SO JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY, (1996 Jul) 11 (7) 662-9. Ref:

65
Journal code: 8607909. ISSN: 0815-9319.
CY Australia
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW LITERATURE)
LA English
FS Priority Journals
EM 199612
ED Entered STN: 19970128
Last Updated on STN: 19970128
Entered Medline: 19961217
AB A number of diagnostic tests have been developed for the detection of H. **pylori**. Diagnostic techniques can be divided into invasive and noninvasive methods. The invasive methods require upper gastrointestinal endoscopy and involve culture of gastric biopsy specimens, examination of stained biopsies and detection of **urease** activity in the biopsies themselves. In addition, we have developed endoscopic diagnosis of H. **pylori** infection in gastric mucosa using **phenol red** dye-spraying. The noninvasive methods include **urea** breath test and serological techniques. Although there has been considerable improvement in the techniques, a combination of at least two different techniques should be used in order to optimize the diagnostic yield. We recommend the use of one rapid test in the combination. The rapid **urease** test, cytology and the **phenol red** dye-spraying endoscopy give results available before the patient leaves the endoscopy suite.
CT Check Tags: Human
***Helicobacter Infections: DI, diagnosis**
***Helicobacter pylori**

L156 ANSWER 10 OF 16 MEDLINE
AN **94111312** MEDLINE
DN **94111312** PubMed ID: **8283630**
TI Staining for **Helicobacter pylori** on gastric mucosa with dye from red cabbage during endoscopy.
AU Kimura S; Arakawa T; Kobayashi K
CS Third Department of Internal Medicine, Osaka City University Medical School.
SO NIPPON RINSHO. JAPANESE JOURNAL OF CLINICAL MEDICINE, (1993 Dec) 51 (12) 3187-91.
Journal code: 0420546. ISSN: 0047-1852.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Priority Journals
EM 199402
ED Entered STN: 19940228
Last Updated on STN: 19950206
Entered Medline: 19940217
AB **Helicobacter pylori** has a high **urease** activity and produces **ammonia** from **urea**, resulting in elevation of mucosal **pH**. Based on this characteristics of **H. pylori**, we have developed a method for staining **H. pylori** under endoscopy using dye from red cabbage (San-red RC, San-Ei Chemical Ind., Osaka), a **pH** indicator, safe for clinical use. After administration of a proton-pump inhibitor and an H2-receptor antagonist, the dye solution, mixed with 2% **urea**, was sprayed over the mucosa by endoscope. Change in color of the dye was found in some areas infected with **H. pylori**. The change in color reflects **urease** activity or amount of **ammonia**. This method may be useful to find the distribution of **H. pylori** in the mucosa and to examine the **H.**

pylori-infected mucosa pathophysiologically.
CT Check Tags: Human; In Vitro
*Dyes: DU, diagnostic use
English Abstract
Gastric Acidity Determination
Gastric Mucosa: CH, chemistry
***Gastric Mucosa: MI, microbiology**
Gastroscopy
***Helicobacter pylori: IP, isolation & purification**
Urease: AN, analysis
RN 77272-43-6 (San-red RC)
CN 0 (Dyes); EC 3.5.1.5 (**Urease**)

L156 ANSWER 11 OF 16 MEDLINE
AN **92129649** MEDLINE
DN **92129649** PubMed ID: **1734051**
TI 15NH4+ excretion test: a new method for detection of **Helicobacter pylori** infection.
AU Wu J C; Liu G L; Zhang Z H; Mou Y L; Chen Q A; Wu J C; Yang S L
CS Department of Nuclear and Digestive Medicine, Xin Hua Hospital, Shanghai, People's Republic of China.
SO JOURNAL OF CLINICAL MICROBIOLOGY, (1992 Jan) 30 (1) 181-4.
Journal code: 7505564. ISSN: 0095-1137.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199203
ED Entered STN: 19920322
Last Updated on STN: 19920322
Entered Medline: 19920302
AB A noninvasive test for the detection of **Helicobacter pylori** infection that uses [15N]**urea** as a tracer has been established. The principle the test is based on is the strong **urease** activity of **H. pylori**. After oral ingestion, [15N]**urea** is broken down into **ammonia** and carbon dioxide by **H. pylori urease** in the stomach. The **ammonia** is absorbed into the blood and excreted in the urine. The amount of [15N]**urea**, reflecting the magnitude of **H. pylori** infection, is evaluated by measuring the abundance and excretion rate of 15N in **ammonia** in the urine. Thirty-six patients were examined in our study. The 15N excretion rates in urine **ammonia** of patients who were **H. pylori** positive were significantly higher than those of **H. pylori**-negative patients (P less than 0.05). Twenty-three patients were **H. pylori** positive by Gram stain and culture. The sensitivity of the 15NH4 excretion test compared with these techniques was 96%, and no false positives were obtained. The 15NH4+ excretion rates of 13 **H. pylori**-negative subjects were all in the normal range (less than 0.3%). This method is a simple, precise, highly sensitive, noninvasive, nonradioactive test. It could be used for diagnosis as well as for the followup of patients receiving **H. pylori** eradication therapy, especially children and pregnant women. It could also be used in epidemiological investigation of **H. pylori** infection in a general population.
CT Check Tags: Female; Human; Male
Adult
***Ammonia: UR, urine**
***Bacteriological Techniques**
***Helicobacter Infections: DI, diagnosis**
Helicobacter pylori: EN, enzymology
Helicobacter pylori: IP, isolation & purification
***Helicobacter pylori: ME, metabolism**

Metabolic Clearance Rate
Middle Age
Nitrogen Isotopes
Random Allocation
Urea: UR, urine
Urease
RN **57-13-6 (Urea); 7664-41-7 (Ammonia)**
CN 0 (Nitrogen Isotopes); EC 3.5.1.5 (**Urease**)

L156 ANSWER 12 OF 16 MEDLINE
AN 91224926 MEDLINE
DN 91224926 PubMed ID: 2092020
TI Relative merits of various rapid biopsy **urease** tests for diagnosis of **Helicobacter pylori** (**Campylobacter pylori**).
AU Bhasin D K; Gupta M M; Ayyagari A; Singh V; Roy P; Malik A K; Mehta S K
SO JOURNAL OF THE ASSOCIATION OF PHYSICIANS OF INDIA, (1990 Sep) 38 Suppl 1 689-91.
Journal code: 7505585. ISSN: 0004-5772.
CY India
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199106
ED Entered STN: 19910630
Last Updated on STN: 19910630
Entered Medline: 19910612
AB Three rapid **urease** tests, i.e., liquid **urea** broth containing **phenol red** as indicator, liquid **urea** broth containing bromothymol blue as indicator and CLO gel were compared in 109 patients of dyspepsia for the diagnosis of **Campylobacter pylori** (**Helicobacter pylori**) infection. Mean time taken for positive reaction in liquid broth with phenol was 3 minutes (range 0.6 to 5.3 minutes) with bromothymol blue was 3.5 minutes (range 0.4 to 5.5 minutes) while with CLO gel it was 101 minutes (range 11-261 minutes). There was no difference in results of liquid **urea** broth containing **phenol red** and bromothymol blue. The difference in timing of **urea** broth containing **phenol red** and bromothymol blue was statistically significant as compared to CLO gel (p less than 0.05). Rapid **urease** tests employing liquid **urea** broth are quick, simple and reliable for the diagnosis of Helicobacer **pylori** infection.
CT Check Tags: Comparative Study; Female; Human; Male
Adolescence
Adult
Aged
Gastric Mucosa: MI, microbiology
***Gastritis: DI, diagnosis**
***Helicobacter Infections: DI, diagnosis**
***Helicobacter pylori**
Helicobacter pylori: IP, isolation & purification
Middle Age
***Urease: DU, diagnostic use**
CN EC 3.5.1.5 (**Urease**)

L156 ANSWER 13 OF 16 MEDLINE
AN **90026861** MEDLINE
DN **90026861** PubMed ID: **2679659**
TI [A rapid **urease** test in **Campylobacter pylori** colonization of the gastric mucosa].
Urease-Schnelltestes bei **Campylobacter-pylori** -Besiedlung der Magenschleimhaut.

AU Bornschein W; Bauernfeind A; Heilmann K L
CS Gastroenterologischen Fachpraxis, Max-von-Pettenkofer-Institut, Munchen.
SO GASTROENTEROLOGISCHES JOURNAL, (1989) 49 (2) 54-8.
Journal code: 8913769. ISSN: 0863-1743.
CY GERMANY, EAST: German Democratic Republic
DT Journal; Article; (JOURNAL ARTICLE)
LA German
FS Priority Journals
EM 198912
ED Entered STN: 19900328
Last Updated on STN: 19900328
Entered Medline: 19891221
AB Biopsies from the gastric mucosa (antrum, corpus) of 145 patients investigated by endoscopy were analysed for **Campylobacter pylori**. The results of bacteriological, histological, enzymatic and chemical methods were compared. **Urease** activity was determined both in biopsies (CLO-test) and in gastric secretion. Furthermore, the concentration of **urea** was measured in gastric secretion. 71% of gastritis, 86% of ulcus duodeni and 83% of ulcus ventriculi diagnosed by endoscopy produced positive histological and/or cultural results, while 100% of control persons exhibited negative for both parameters. The sensitivity of the CLO-test (n = 112) was 95% and its specificity 78% when compared with bacteriological and histological results. The majority of false positive results was due to delayed and incomplete reactions. However, when compared with endoscopic-histological results the specificity of the CLO-test was 100%. The results of a modification of CLO-test (without culture medium) were up to 5 hours comparable. There was no positive correlation between the concentration of **urea** in gastric secretion and the histological or cultural identification of **Campylobacter pylori**. However, the measurement of **ammonia** turned out to be promising (sensitivity 80%). None of the tests was sufficiently specific on its own, whereas a 100% specificity was achieved when both the CLO-test and the determination of **ammonia** in gastric secretion were performed.
CT Check Tags: Female; Human; Male
Adult
Aged
Bacteriological Techniques
Biopsy
Campylobacter: IP, isolation & purification
***Campylobacter Infections: MI, microbiology**
Campylobacter Infections: PA, pathology
English Abstract
Gastric Juice: MI, microbiology
***Gastric Mucosa: MI, microbiology**
Gastric Mucosa: PA, pathology
***Gastritis: MI, microbiology**
Gastritis: PA, pathology
Middle Age
***Peptic Ulcer: MI, microbiology**
Peptic Ulcer: PA, pathology
***Urease: AN, analysis**
CN EC 3.5.1.5 (**Urease**)

L156 ANSWER 14 OF 16 MEDLINE
AN 89380821 MEDLINE
DN 89380821 PubMed ID: 2778071
TI Optimization of a medium for the rapid **urease** test for detection of **Campylobacter pylori** in gastric antral biopsies.
AU Goldie J; Veldhuyzen van Zanten S J; Jalali S; Hollingsworth J; Riddell R H; Richardson H; Hunt R H
CS Department of Laboratory Medicine and Gastroenterology, McMaster University Medical Centre, Hamilton, Ontario, Canada.

SO JOURNAL OF CLINICAL MICROBIOLOGY, (1989 Sep) 27 (9) 2080-2.
Journal code: 7505564. ISSN: 0095-1137.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198910
ED Entered STN: 19900309
Last Updated on STN: 19980206
Entered Medline: 19891026
AB We developed a buffered azide-free **urea** medium which is sensitive, specific, and nontoxic for rapid detection of **Campylobacter pylori** in gastric biopsies. Detection of **urease** produced by the organism provides the basis for the test. The substrate is **urea** in monobasic sodium phosphate buffer, and **phenol red** provides indication of the pH change that results from **urease** activity. A rapid change from yellow to red occurs in the presence of C. **pylori**, even at low concentrations of the organism. A slower color change occurs with higher concentrations of other **urease** producers, such as Yersinia enterocolitica and Proteus mirabilis. Experience with 51 patients with our medium showed excellent results in detection of C. **pylori** in gastric mucosal biopsies. In clinical research and practice, a rapid bedside test will be helpful for rapid diagnosis of C. **pylori**-positive patients.
CT Check Tags: Human
Azides
Biopsy
Buffers
Campylobacter: EN, enzymology
***Campylobacter: IP, isolation & purification**
Culture Media
*Gastric Mucosa: MI, microbiology
Gastroscopy
Indicators and Reagents
Phenolsulfonphthalein
Predictive Value of Tests
Pyloric Antrum
Sodium Azide
Temperature
***Urea: ME, metabolism**
***Urease: AN, analysis**
RN **143-74-8 (Phenolsulfonphthalein)**; 26628-22-8 (Sodium Azide); **57-13-6 (Urea)**
CN 0 (Azides); 0 (Buffers); 0 (Culture Media); 0 (Indicators and Reagents); EC 3.5.1.5 (**Urease**)

L156 ANSWER 15 OF 16 MEDLINE
AN 89357591 MEDLINE
DN 89357591 PubMed ID: 2767501
TI Detection of **Campylobacter pylori** by the biopsy **urease** test: an assessment in 1445 patients.
AU McNulty C A; Dent J C; Uff J S; Gear M W; Wilkinson S P
CS Public Health Laboratory, Gloucestershire Royal Hospital.
SO GUT, (1989 Aug) 30 (8) 1058-62.
Journal code: 2985108R. ISSN: 0017-5749.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198910
ED Entered STN: 19900309
Last Updated on STN: 19900309
Entered Medline: 19891006

AB The presence of C **pylori** infection was determined in 1445 patients undergoing upper gastrointestinal endoscopy over a 12 month period. The presence of C **pylori** was detected in gastric mucosal biopsy specimens by the biopsy **urease** test, microscopy (Gram stained smears and histology) and culture. Two media were used for the biopsy **urease** test: Christensen's **urea** broth (for the first 600 patients) and the Christensen's **urea** broth modified by increasing the concentration of **phenol red** and omitting the nutrients, glucose and peptone (for the remaining patients). Both the Christensen's **urea** broth and modified **urea** broth were almost 100% specific when compared with detection of C **pylori** by Gram, culture and histopathology. The modified broth was more sensitive (96% sensitivity compared with culture) than the Christensen's broth (92% sensitivity) but this difference was not statistically significant. The modified broth gave significantly more positive results (58%) in less than 30 minutes than the Christensen's broth (48%). Seventy four per cent of positive results were available in less than two hours. Specimens from patients with extensive C **pylori** infection gave more rapid results: 86% of specimens that yielded a profuse growth of C **pylori** and 76% that contained numerous organisms on histological sections had a positive **urease** test in less than one hour. There was no significant difference between the specificity and sensitivity of our modified **urea** broth and the other modified broths described in the literature. This test is a cheap and rapid alternative to the diagnosis of C **pylori** by Gram stained smears or culture.

CT Check Tags: Human; Support, Non-U.S. Gov't
Biopsy
Campylobacter: EN, enzymology
***Campylobacter: IP, isolation & purification**
***Campylobacter Infections: DI, diagnosis**
Gastric Mucosa: MI, microbiology
Gastric Mucosa: PA, pathology
***Urease: AN, analysis**

CN EC 3.5.1.5 (**Urease**)

L156 ANSWER 16 OF 16 MEDLINE
AN **87181595** MEDLINE
DN **87181595** PubMed ID: **2436470**
TI **Campylobacter pyloridis** gastritis I: Detection of **urease** as a marker of bacterial colonization and gastritis.
AU Hazell S L; Borody T J; Gal A; Lee A
SO AMERICAN JOURNAL OF GASTROENTEROLOGY, (1987 Apr) 82 (4) 292-6.
Journal code: 0421030. ISSN: 0002-9270.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198705
ED Entered STN: 19900303
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Entered Medline: 19870506

AB A method to detect the presence of **Campylobacter pyloridis** in dyspeptic patients is described. The test procedure involves placing a gastric pinch biopsy into a small amount of a solution containing **urea** and a **pH** indicator in the well of a microtiter tray. The method depends on the ability of **C. pyloridis** to hydrolyse **urea** and release an alkaline product (**ammonia**). The "microtiter biopsy **urease** test" is 100% specific for **C. pyloridis** and has a 91% sensitivity after 18 h reaction time. Seventy-five percent of positive biopsies had a reaction time of less than 1 h. The test may be used to predict the presence of antral gastritis; as well as marking the presence

of the bacterium; with a positive predictive value of 96% and a negative predictive value of 73%. There was a positive correlation between the biopsy **urease** test results and the grades of both chronic and active antral gastritis. This test is simple and can be performed in the endoscopy clinic as the formulation of the reagent obviates the need for aseptic techniques.

CT Check Tags: Human; Support, Non-U.S. Gov't
Ammonia: ME, metabolism
***Campylobacter: EN, enzymology**
***Campylobacter Infections: DI, diagnosis**
Gastric Mucosa: MI, microbiology
***Gastritis: DI, diagnosis**
Gastroscopy
Pyloric Antrum: MI, microbiology
Staining and Labeling
Urea: ME, metabolism
***Urease: AN, analysis**

RN **57-13-6 (Urea); 7664-41-7 (Ammonia)**

CN EC 3.5.1.5 (**Urease**)

=> d his

(FILE 'HOME' ENTERED AT 14:18:49 ON 06 DEC 2002)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 14:19:07 ON 06 DEC 2002
E UREASE/CN
L2 507 S UREASE NOT L***
E UREA/CN
L3 1 S E3
E AMMONIA/CN
L4 1 S E3
E PHENOL RED/CN
L5 2 S E3,E7,E8
L6 23 S 143-74-8/CRN
L7 6 S L6 AND (K OR NA)/ELS
L8 1 S L6 AND H3N
L9 4 S L7 AND 2/NC
L10 6 S L5,L8,L9

FILE 'HCAPLUS' ENTERED AT 14:21:31 ON 06 DEC 2002
L11 6311 S L***
L12 136 S L2
L13 10002 S UREASE
L14 5979 S L11,L12 AND L13
L15 6375 S L11,L12,L14
L16 4023 S L13 NOT L15
L17 57012 S L3
L18 179374 S UREA
L19 2290 S CARBAMIDE
L20 183476 S L17-L19
L21 2808 S L15 AND L20
L22 1997 S L16 AND L20
L23 4805 S L21,L22
L24 105034 S L4
L25 154412 S AMMONIA
L26 919 S L23 AND L24,L25
L27 1067 S L23 AND NH3
L28 1570 S L26,L27
L29 1137 S L10
L30 2826 S PHENOL RED
L31 234 S PHENOLSULFONPHTHALEIN OR PHENOLSULPHONPHTHALEIN

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L32          14 S L28 AND L29-L31

     FILE 'REGISTRY' ENTERED AT 14:26:23 ON 06 DEC 2002
L33           1 S 14798-03-9

     FILE 'HCAPLUS' ENTERED AT 14:26:28 ON 06 DEC 2002
L34       41560 S L33
L35         203 S L23 AND L34
L36         523 S L23 AND NH4
L37        1945 S L35,L36,L28
L38          15 S L37 AND L29-L31
L39          15 S L32,L38
                SEL DN AN 1 5
L40           2 S L39 AND E1-E6
                E MARSHALL B/AU
L41          80 S E3,E12,E25-E27
                E MENDIS A/AU
L42          22 S E3,E4,E6,E7
                E CHAIRMAN S/AU
L43           2 S E1
                E KIMBERLEY/PA,CS
L44        1585 S (KIMBER?(L)CLARK?)/PA,CS
L45        1689 S L41-L44
L46           7 S L45 AND L15,L16
                SEL DN AN 2 6
L47           5 S L46 NOT E1-E6
L48           5 S L47,L40
L49           5 S L48 AND L23
L50           3 S L49 AND L29,L30,L31
L51           4 S L49 AND (L24,L25,L34 OR NH3 OR NH4)
L52           5 S L49-L51
L53           3 S L52 AND AMMON?
L54           5 S L52,L53
L55        4805 S L11-L16 AND L17-L20
L56        1945 S L55 AND (L24 OR L25 OR L34 OR NH4 OR NH3)
                E INDICATOR/CT
L57           2 S L56 AND E10-E16
                E E8+ALL
L58           8 S L56 AND E2+NT
L59          96 S L56 AND INDICATOR
L60          96 S L57,L58,L59
L61          15 S L56 AND L29-L31
L62           2 S L56 AND (?PHENOLSULFONPHTHALEIN? OR ?PHENOLSULPHONPHTHALEIN?)
L63         101 S L60-L62
                E PH/CT
                E E3+ALL
L64           3 S L63 AND E8,E9,E7+NT
L65           2 S L63 AND E13+NT
L66          46 S L63 AND PH
L67           8 S L63 AND PYLORI
L68           3 S L63 AND CAMPYLOBACT?
                E CAMPYLOBACTER/CT
L69        3324 S E3-E47
                E E3+ALL
L70        2217 S E4+NT
L71           3 S L63 AND L69,L70
L72           7 S L63 AND HELICOBACT?
                E HELICOBACT?/CT
L73        5114 S E4-E35
                E E4+ALL
L74        6277 S E4+NT
L75           8 S L63 AND L73,L74
L76           8 S L67,L68,L71,L72,L75
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L77           7 S L76 AND L64-L66
L78          10 S L54,L75-L77
                E DIGESTIVE TRACT/CT
L79       11677 S E4-E40
                E E4+ALL
                E E3+ALL
L80      554522 S E3+NT
L81         126 S L56 AND L79,L80
L82           7 S L81 AND L63
L83          11 S L78,L82
L84          11 S L83 AND L11-L32,L34-L83
L85           6 S L84 AND (H OR C)()PYLOR?
L86          10 S L84 AND (HELICO? OR CAMPYLO?)()PYLOR?
L87          11 S L84 AND (PH OR ?UREA OR UREASE OR INDICATOR OR PH OR GASTR? O
L88          11 S L83-L87
L89          10 S L88 AND (HELICOBACT? OR CAMPYLOBACT?)
L90          11 S L88,L89
                SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 14:56:11 ON 06 DEC 2002
L91           5 S E1-E5

     FILE 'REGISTRY' ENTERED AT 14:56:27 ON 06 DEC 2002

     FILE 'HCAPLUS' ENTERED AT 14:56:46 ON 06 DEC 2002

     FILE 'WPIX' ENTERED AT 15:00:00 ON 06 DEC 2002
                E C12Q001-58/IC,ICM,ICS
L92         210 S E3-E5
                E UREA/DCN
                E E3+ALL
L93       46725 S E2 OR 0123/DRN OR UREA
L94       47887 S CARBAMIDE OR L93
L95        1147 S UREASE OR L92
L96         579 S L95 AND L93,L94
L97          70 S L96 AND INDICATOR
L98          16 S L96 AND (PHENOL RED OR PHENOLRED OR ?PHENOLSULFONPHTHALEIN? O
                E PHENOL RED/DCN
                E E3+ALL
L99          13 S L96 AND E2
L100         96 S L96 AND (B11-C07? OR C11-C07?)/MC
L101         86 S (B12-K04A OR C12-K04A)/MC AND L96
                E MARSHALL B/AU
L102         37 S E3,E11
                E MENDIS A/AU
                E CHAIRMAN S/AU
L103          6 S L102 AND L96
L104        212 S L96 AND G01N/IC,ICM,ICS
L105        126 S L96 AND S03-E?/MC
L106         61 S L97-L99 AND L100,L101,L104,L105
L107         25 S L106 AND (AMMON? OR NH4 OR NH3)
                E AMMONIA/DCN
                E E3+ALL
L108      16779 S E2 OR 1713/DRN
L109        297 S L96 AND (L108 OR AMMON? OR NH4 OR NH3)
L110         36 S L109 AND L97,L98,L99
L111          7 S L110 AND (HELICOBACT? OR CAMPYLOBACT? OR PYLORI?)
L112          5 S L110 AND (HELICOBACT? OR CAMPYLOBACT? OR H OR C)()PYLORI?
L113          7 S L111,L112
L114         29 S L110 NOT L113
                SEL DN AN 1 4 6 10 13 20
L115          6 S L114 AND E1-E15
L116         15 S L113,L115,L103
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                E KIMBERLEY/PA
L117            8 S E5-E8,E15
L118            1 S E22
L119         3451 S E34-E44,E48
L120         2039 S E49-E57
                E KIMB/PACO
L121         4546 S E3-E5
L122            0 S L117-L121 AND L96

     FILE 'WPIX' ENTERED AT 15:28:11 ON 06 DEC 2002

     FILE 'MEDLINE' ENTERED AT 15:28:47 ON 06 DEC 2002
L123         5058 S UREASE
L124         1689 S L123 AND UREA
L125          486 S L124 AND (AMMON? OR NH3 OR NH4)
L126          102 S L125 AND (PYLORI OR HELICOBACT? OR CAMPYLOBACT?)
L127          101 S L125 AND (H OR C OR HELICOBACT? OR CAMPYLOBACT?)()PYLORI?
                E HELICOBACTER/CT
                E E3+ALL
L128           87 S L125 AND E11+NT
                E CAMPYLOBACTER/CT
                E E3+ALL
L129           11 S L125 AND E11+NT
L130          102 S L126-L129
L131          127 S (A3. OR C6.)/CT AND L125
L132           56 S L130 AND L131
                SEL DN AN 5 10 17 31 54 56
L133            6 S L132 AND E1-E18
L134          117 S L130,L131 NOT L132
                SEL DN AN 50
L135            1 S E19-E21
L136            7 S L133,L135 AND L123-L135
L137          929 S L124 AND E5./CT
L138          546 S L124 AND E1./CT
L139          400 S L124 AND DI./CT
L140         1095 S L137-L139
L141           62 S L140 AND L130
L142          246 S L140 AND L125
L143           62 S L141 AND L142
L144           30 S L143 AND PH
                E HYDROGEN-ION CONCENTRATION/CT
                E E3+ALL
L145       171761 S E5+NT
                E INDICATOR/CT
L146       253575 S E23+NT
L147           16 S L143 AND L145
L148            3 S L143 AND L146
L149         1331 S L29,L30,L31
L150           13 S L149 AND L140
L151            2 S L150 AND L125
                SEL DN AN L150 6 12 13
L152           10 S L150 NOT E1-E9
L153           16 S L136,L152
L154           16 S L147,L148 NOT L153
L155           16 S L153 AND L123-L154
L156           16 S L155 AND (PYLOR? OR CAMPYLOBAC? OR HELICOBACT?)

     FILE 'MEDLINE' ENTERED AT 15:47:08 ON 06 DEC 2002
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